Britain's leading weekly magazine for software reviews

Home Computing WEEKLY

An Argus Specialist Publication

No. 51
Feb 28-Mar 5, 1984

40p

Software reviews for:
Spectrum, BBC, VIC-20, Oric, Commodore 64, Atari, Texas, Electron, Dragon,

FREE COMPETITION
150 prizes to be won from
CDS Micro Systems

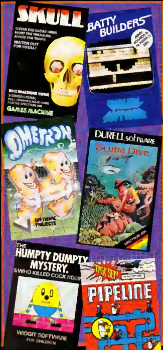
Three VIC-20 programs to type in

Two great Spectrum games to play

AND:
listings for BBC/Electron, Dragon, Atari, Commodore 64

Creating bar charts on the Spectrum: just follow our advice

PLUS
your letters, U.S. Scene, latest news, One Man's View . . .


SKULL
ENTER THE CATACOMBS
HUNT THE TREASURE
AVOID THE TRAPS
WATCH OUT FOR SKULL!
3-DIMENSIONAL FULL-GRAPHICS MAZE GAME FOR THE SPECTRUM 48K
GAMES MACHINE
BATTY BUILDERS
ATARI 400/800 & ALL MODELS 16K
DURELL software
Scuba Dive
SPECTRUM 48K
OMETRON
SOFTWARE PROJECTS
THE HUMPTY DUMPTY MYSTERY.
& WHO KILLED COCK ROBIN
WIDGIT SOFTWARE FOR CHILDREN
TASK SET!
PIPELINE

Yogi Bear software?

Well-known cartoon characters are likely to appear in computer games as a result of talks now going on

Walt Disney is discussing a major world wide deal with a U.S. company and Hanna Barbera — owners of Yogi Bear and Huckleberry Hound — has been talking to several U.K. software companies

Lynda Wilson, of Walt Disney's U.K. marketing department, said: "There is a licence pending in America

"It's a major deal which may well be for world rights. In the same way we have licensed Coca Cola for our theme parks

"Software is a sphere that's going to be very large.

Continued on page 5

We'll spend more in '84

Home computers and software gave W. H. Smith a profits boost — and the boom goes on

Merchandise controller Stewart Binnie forecast: "This year is going to be even better than 1983."

His company had just reported that sales of home computers and software had soared by 55.5 per cent, from £15m to £27m, in the 10 months ended December 3

Smiths has 30 computer shops-within-shops and plans to open another 16-17 this year

Mr Binnie put its success down to two main factors: longer ex-

Continued on page 5

NEW RELEASE
The Guardian
£5·95

R&R SOFTWARE

means value

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CHOPPER X-1
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Should you have difficulty in obtaining our products
from your local Dealer please send cheque or postal
order indicating titles required, for return of post service.

CHOPPER X-1

(For any ZX Spectrum)

You command the Spectrum Chopper X-1 Gunship on missions to repel invading forces and save the earth. An action packed original game. Full machine code.

R.R.P. **£5.50**

GALAXY WARLORDS

(For any ZX Spectrum)

A fast action machine code space game in which you defend your position as Galaxy Warlord against attacking enemy starships. Both your patrol ship and rockets are steerable. The enemy never seem to give up. Full colour action graphics and sound for just

R.R.P. **£5.50**

JUNIOR ARITHMETIC

(For any ZX Spectrum)

An excellent educational program for 6–9 year olds. The fun way to learn and practice Addition, Subtraction, Multiplication and Division. Mistakes are corrected and explained along with a running total of correct answers.
Terrific value at just

R.R.P. **£4.95**

SPECTIPEDE

(For any ZX Spectrum)

Enjoy the thrill of this full machine code arcade game. Battle to keep the Spectipede at bay but watch out for a very unpredictable spider which is out to get you. For 1 or 2 players with top score and on-screen high score feature

R.R.P. **£5.50**

GOLF

(For any ZX Spectrum)

Enjoy a game of golf in the comfort of your own home. With the choice of a 9 or 18 hole course and the challenge of Fairway, Rough, Trees, Bunkers, Water & Green. Displays are in realistic colour graphics with full score cards. No two games are alike

R.R.P. **£3.75**

GNASHER

(For any ZX Spectrum)

The famous arcade maze game with fast machine code action, incredible graphics, colour and sound. Eat-up all the dots before the Ghosts eat you, or beat them to an energy pill which will [illegible] eat them! Hours of addictive fun with on screen scoring and high score tape save capability for just

R.R.P. **£4.95**

STAR TREK

(For 48K Spectrum only)

One of the original computer space games, but this program has many up-dated features normally only found on larger computer versions. Test yourself as Starship Commander as your mission takes you to the outer reaches of the Galaxy to protect Federation Space. The Starship and you [illegible]. Excellent value at

R.R.P. **£4.95**

OTHER COMPUTERS?

Send S.A.E. for a full list of our growing range of software now Available for ZX81 and ORIC 1 Computers

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Classic Adventure for Spectrum

A text-only adventure, Classic Adventure is the latest version of this age old classic that was first written in Fortran and took up over 200K of memory. Described as the ultimate adventure this version has been produced for the 48K Spectrum by Melbourne House. Classic Adventure costs £6.95.

Melbourne House, Castle Yard House, Castle Yard, Richmond, Surrey TE10 6TF

• • •

Pottem with A & F

Anglesey Enterprises and A & F Software have joined forces to bring you a video game version of the popular board game Pottem. Several games can be played on the board original and this feature has been incorporated in the computer version. It is thought that this is the first ever link with a board games manufacturer and the company hopes that this is the start of a fruitful trend.

Unit 8, Canal Side Industrial Estate, Woodbine St East, Rochdale, Lancs

• • •

Simple Software has added Simply Assemble to its range. Priced at £37, the assembler comes on tape or disc for the Commodore 64 or PET 3.0 or 4.0 versions. The makers say even beginners can understand the instructions.

Simple Software, 15 Havelock Rd, Brighton, Sussex BN1 6GL

• • •

Two players can use Chariot Race, a new VIC-20 arcade game, at the same time, says Micro-Antics. It costs £6.95 and Micro-Antics says the theme is true — Emperor Commodus was a famous chrioteer.

Micro-Antics, Littlehome, Hawthorne Lane, Codsall, Staffs

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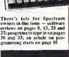
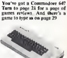
I'm An
URBAN
UPSTART
Are You?
RICHARD SHEPHERD SOFTWARE

There's lots for Spectrum owners in this issue — software reviews on pages 8, 13, 23 and 27, programs to type in on pages 30 and 33, an article on programming starts on page 15



You've got a Commodore 64? Turn to page 21 for a page of games reviews. And there's a game to type in on page 29



VIC-20 users: turn to pages 10 and 47 for three great programs to type in. Software reviews for your computer are on pages 23 and 26

CDS Micro Systems

We've got 150 prizes of software from CDS Micro Systems to give away in this week's competition. Turn to page 7 and see if you can spot the differences

More than fun and games!

FIRST STEPS with the Mr. Men

by Primer Educational Software

The ever-popular Mr Men help prepare young children for reading with four simple and absorbing games designed to exercise essential skills as well as entertain.

An easy-to-use, colour-coded key guide is included with an illustrated introductory book, featuring the Mr Men. For ages 4 to 8 years. Available now on cassette for the BBC B, Spectrum 48K and Electron **£8.95**

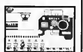
QUICK THINKING!

by Widgit Software

Two mind-stretching, space-age games to test mental arithmetic and nimble fingers.

In **Sum Vaders** alien robots invade the earth. Only quick thinking and fast reactions can prevent them. Several levels of difficulty and a two-player game with a handicap option make Sum Vaders equally testing for all family members, from 8 years to adult.

Robot Tables challenges the young player to make a series of perfect robots. Knowing your multiplication tables is the key to controlling the robot-making machine. With a learning mode and a testing mode, Robot Tables is a fun way for early learners, and more advanced children, to master an important and often neglected skill.



Available now on cassette for the Spectrum 48K, and Commodore 64, BBC B and Electron **£6.95**

CÆSAR THE CAT

by Andromeda Software

Meet Caesar, a cheeky young cat on duty in a well-stocked larder. He's kept busy chasing a gang of hungry mice eating the family's food. Playing against the clock, you guide Caesar along crowded shelves to pounce on the mice.

A fast, colourful, all-action, arcade-style game with catchy music and a best-score record. Challenging for high-scoring arcade addicts as well as great fun to play for the novice.

Available on cassette for the Commodore 64 **£8.95**

Prices include VAT and post and packaging
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First Steps with the Mr Men (MM01)	£8.95				■
Quick Thinking (QT01)	£6.95				
Caesar the Cat (CC01)	£8.95	■	■	■	

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Cartoons

From front page

"It involves big money and we have had quite a few enquiries from U K companies"

She said any licence for world rights would allow for the different home computers popular in different countries

Walt Disney's characters include Mickey Mouse, Donald Duck, Goofy, Pluto and characters from films like The Lady and the Tramp and Snow White

Hanna Barbera's U K licensing director, Tony Gabsby Peet, was more guarded

He agreed that he had talked to a number of U K software houses, but stressed "We haven't even reached first base yet — which is not to say we don't want to

"We are part of a large U S. company and ultimately that is where the decisions are made It's a lengthy process"

He said that, with greater competition for sale of computer games, using a well-known character would give a big sales advantage

Hanna Barbera's characters include Yogi Bear, Huckleberry Hound, the Flintstones and Scooby Doo

More in '84

From front page

perience and that, starting with a narrower product range, expanding the computing side of the business had been less hazardous for Smiths

Even so, many customers had been disappointed as their choice of computer was not available — particularly the Electron, which suffered from Acorn's production problems, and the Spectrum The bright spot had been the Commodore 64 which was in good supply

Mr Binnie said "It's our experience that the demand is still unabated And software is very strong, as you might imagine"

He said the 1983 pattern would be repeated demand would be strong until May and would pick up again after the 'O'- and 'A'-level results in June and July

Computer magazines had shared the success, he said, and added "We seem to have more and more titles and we sell more of them every month"

Mr Binnie warned newcomers that retailing computers and software was now a sophisticated business

He said "It's not something you can wander into"

● W H Smith & Son (Holdings) reported pre-tax profits of £20 11m against £14 43m — a rise of 39 per cent — on a turnover of £770 31m, up by £73 92m

Shares rose 4p to 140p on the news This was described by a commentator as "a miserly acknowledgment of a rather impressive performance"

Pirates: probe starts

Bosses of four well-known software companies have been given the job of recommending how the industry should act against piracy

They will be reporting back to the Guild of Software Houses on Friday next week

Members made the decision to appoint a committee after a three-hour meeting when they heard of a massive counterfeiting operation

They were shown copies of cassette software so good that at least one member still believes they could be originals

Quicksilva's managing director, Rod Cousens, and GOSH chairman Nick Alexander argued in favour of an Anton Pillar order, a legal device allowing a surprise raid

But members seem to have baulked at the cost — at least £5,000, with the prospect of another £50,000 if the case was fought in court

Mr Cousens said the meeting was shocked at the quality of the copies

He said "Our members wanted more information before they were prepared to embark on what could be a costly form of action I'm prepared to back it with a large sum of money Piracy is a major threat to the industry I think you'll see software houses getting together on this"

Now, he said, bodies like the Inland Revenue, Trading Standards officers and the Fraud Squad were taking an interest

He had discussed the problem with Barry Henderson MP (Lab, East Fife), who is chairman of the parliamentary committee on information technology And he planned to see John Butcher, a junior minister at the Department of Trade

Speaking of the GOSH meeting, Mr Alexander, managing director of Virgin Games, said "I would have been elated if they had decided to act, but it was too much to hope

"I don't think people are going to say 'Here's £50,000, get on with it' It takes a lot to get that sort of money out of people"

It has long been an aim of some leading members of GOSH to set up a legal fighting fund Software piracy was one of the driving forces in the establishment of the guild

One of the committee members, Tim Langdell, of Softek, said "We are at a stage where it's possible to make a statement, an example, by doing this I was among those at the meeting who were still deciding There are too many unknowns at present, that's why we set up the committee It would be very difficult to support an Anton Pillar order regardless of cost"

Programming by rote

Specially written for young programmers, Foulshams has just released Spectrum Magic, a book about computer programming on the Sinclair Spectrum by Steve Betts The book is written for children of 9 years old and upwards and the essence of the book is action and enjoyment Games programs and other easy to understand routines are included in the text to keep kids interested and involved while they learn Price £5 50

W Foulsham & Co Ltd, Yeovil Road, Slough, Berks

Talk to my computer

In what is described as a development to rival that of home computers, Orion Data has brought out a low cost speech recognition package for the Spectrum

Called Micro Command, it translates spoken words into signals To accommodate different accents and voices, a "voice print" is taken Commands can even be entered in foreign languages

The package consists of the unit, two manuals, microphone and a cassette with speech loading instructions plus a free game Price £49 95

Orion Data, 3 Davendish St, Brighton, East Sussex BN2 1RN

QL club

With the launch of Sinclair's QL computer, Leon Heller and Brian Pain have announced IQLUG — the Independent QL User's Club — offering monthly newsletter, free software library, free advice service, workshops, advice for local groups A six month trial subscription costs a mere £3 25

You could be on our pages

We welcome programs, articles and tips from our readers.

PROGRAMS must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Competitive rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

Paul Liptrot, Home Computing Weekly,
No.1 Golden Square, London W1R 3AB

Wait for the QL

Potential buyers of the new Sinclair QL micro are being warned that it will be April or May before they can expect to see their machines.

Sinclair admitted being taken totally by surprise by demand for the QL. A spokeswoman said: "This is a business machine aimed at a different market to our previous products. It is much more expensive than previous models and we simply didn't expect the response."

Even before the machine was advertised, enthusiasts were sending in their cheques for £399 and the advertising itself, says the company, has been very low key.

With a back-log of orders of over 6,000 and hundreds more coming in by the day, Sinclair has been writing advising them of the delays. This is to pre-empt action by the Advertising Standards Authority which has already started to receive complaints about late delivery.

It seems Sinclair will not be increasing production levels to cope with the back-log although the company was unwilling to comment on this. Production levels are, however up to original plans and are on stream for 20,000 plus units per month by the middle of the year.

First deliveries of the 128K QL were promised for the end of February and the company has said this will be honoured. Although Thorn EMI Datatech are sole suppliers at present, Sinclair is likely to seek a second source later in the year — in time to meet the June release of the QL into High Street stores.

Acorn: all the 'details'

Acorn is believed to be planning a three-pronged offensive to counter Sinclair's new QL, retain the BBC contract and to appeal to business users.

The following details are from an HCW source which is usually reliable.

- Price drops are on the way for the 32K BBC computer, now £399, and the recently launched Electron, at £199 described as a "cut-down" BBC micro. Figures range from £150 to £30 as the BBC discount and up to £70 off the price of the Electron.

- It now seems certain that the long-awaited Advanced Business Machine will not use the National Semiconductors 16032 "super chip". It is likely to be far more conventional with a later 16032 option as a second processor.

Other options may well include a Z80 processor, so the CP/M business operating system can be offered to take advantage of the vast range of business software running under this system. The other likelihood is compatibility with the IBM Personal Computer — which has rapidly set a standard. Most business computers now claim IBM compatibility.

- Acorn is being challenged for the BBC's "official" computer by Sinclair Research. It is a valuable contract, giving virtually automatic entry to schools, and Sir Clive Sinclair has long been upset that his company has not been allowed to share the success.

In a bid to retain the contract, Acorn has prepared a new model with likely names including "BBC 2" and "BBC model C". Model C would imply compatibility, a feature which the BBC would insist upon.

At £399, it may provide 128K of RAM — the same as the QL — plus separate screen memory.

A rumoured feature is the ability to create shades of colours, allowing an almost infinite palette. With Acorn's experience of The Tube, built in to the BBC to allow easy attachment of enhancements, it would make sense to use a multi processor system, not necessarily a dual system.

Some of these rumoured details may not be made public for several months and they depend on market movements. Our source is, however, confident that this is the way Acorn staff are thinking.

Eager Beva launches learning programmes

Good news for parents is that Specialised Education Software and Services have started to sell their range of educational software in High Street stores.

The range of programmes, developed for use in mainstream and special schools will be available for use initially on the BBC model B computer but should be brought out for other machines including the Acorn Electron and Enterprise computers in the near future.

The first two packages are Jigsaw Puzzle and Sliding Block Puzzle. Jigsaw Puzzle contains four different pictures and the trick is to assemble them, developing memory and encouraging familiarity with the keyboard along the way. There are five levels of difficulty.

Sliding block is an electronic version of that old idea of a picture in a frame made up of movable blocks. Again there are four pictures and five levels of difficulty. Both packages cost £9.95 each and are available on cassette or disc.

Ega Beva SESS Ltd, Central Trading Estate, 275-277 Bath Road, Bristol BS4 3EH

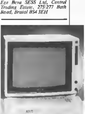
Wells Work station

Latest product from the King Cole Tube Bending Company is the Wells work station. It features split level work surfaces for optimum working levels, a four way electrical socket, sturdy metal frame and castors for easy movement.

All these features have been designed for easy working and a minimum of trailing wires. The work surfaces are finished with easy to clean laminated plastic and raised safety edges help prevent equipment falling over the edge.

King Cole Tube Bending Company Ltd, 40 Buckland Road, Pen Mill Trading Estate, Yeovil, Somerset BA21 5EJ

Wells computing work station



The Sony KV1430 computer TV

Computer TV from Sony

New from Sony is the 14-inch KV1430 Trinitron TV. Although it shares all the quality of the other TVs in the Sony range, its unique feature is the RF socket mounted on the front of the set. This allows the user to connect up a home computer without the bother of fiddling round the back to find the aerial socket.

There is also the usual socket on the back of the TV and selection is made by means of a button on the front panel.

Another design feature made with home computers in mind is the vertical styling which raises the screen a few inches off table level. This allows the computer to stand in front of the TV without obscuring the screen. The KV1430 is available in white or gray and costs around £249.

Sony (UK) Ltd, Staines House, 158-162 High Street, Staines, Middlesex TW18 4AZ

Experience great games from CDS Micro Systems

There's 150 prizes to be won

Enter our spot the difference competition and you could win tapes for your Spectrum or Oric from CDS Micro Systems

We've got 150 prizes of great games from CDS Micro Systems waiting to be won in this week's competition.

All you have to do is spot the differences between our two cartoons, based on the exciting new CDS release, Winged Warlords.

You'll see warriors, mounted on flying horses, battle it out in a program which features smooth graphics, thanks to 100 per cent machine code.

Winged Warriors, which is among the prizes you could receive, runs on either model of the Spectrum and costs £5.95.

The total value of the prizes is £1,190 and the games run on the Spectrum and the Oric 1.

The first 50 winners will get two tapes and the next 100 will receive one cassette.

The prizes

The first 50 correct entries we open will win the senders two games from CDS, whose slogan is " " for the ultimate experience in computer games."

Senders of the next 100 correct entries opened will win one tape.

Prizes for Spectrum owners will be drawn from the following list. All except Spectrum Safari (48K) run on either Spectrum:

Caterpillar **Reversi**
Magic Meanies **Winged Warlords**
Spectrum Safari **Pool**

Prizes for Oric owners will be one or both of these two games, which run on either model:

Bozy Boo **Reversi**

The winners' names and the solution will be published in Home Computing Weekly.

How to enter

Examine the two cartoons to find the differences between them.

Mark the differences on cartoon B by marking them with a semi opaque felt tip pen or circling them with a ballpoint pen.

Then fill in your name and address, the computer for which you would like prize/s — Spectrum or Oric — and the number of differences you found. If you own a Spectrum please indicate whether it is the 48K or 16K model.

Seal the coupon and cartoon B in an envelope and write clearly on the back the number of differences you found.

Post your entry to CDS Competition, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB.

Entries close at first post on March 16, 1984.

You may enter as many times as you wish but each entry must be on the official coupon and cartoon — not copies — and sealed in a separate envelope. Do not include anything else in the envelope.

The prizes will arrive from CDS within 28 days of the publication of the issue containing the names of the winners.

Important: please follow carefully the guidelines on entering. Incomplete or wrongly completed entries and envelopes without the number of differences on the back cannot be considered.

The rules

The first 50 correct entries opened after the closing date will win their senders two tapes and the next 100 correct entries win one tape. Entries which do not follow the guidance in the How to Enter section on this page will be discarded.

Entries will not be accepted from employees of Argus Specialist Publications, CDS Micro Systems and Alabaster Passmore & Sons. This restriction also applies to employees' families and agents of the companies.

Closing date is first post on March 16, 1984.

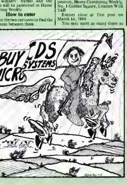
The editor's decision is final and no correspondence will be entered into.

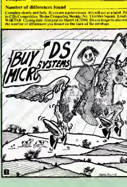
CDS Competition

Entry Coupon

Name	
Address	
	post code
Computer	
Number of differences found	

Complete clearly and fully. If you are a prizewinner, this will act as a label. Post to CDS Competition, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB. Closing date: first post on March 16, 1984. Do not forget to also write the number of differences you found on the back of the envelope





Up, up and away . . . by micro

Space and aircraft simulations for Dragon, Spectrum and BBC. Our test pilots hand in their reports

2002
52K BBC £7.95

Superior, Dept BM1, 69 Leeds Rd, Bramhope, Leeds

BBC owners who enjoy flight simulations and more demanding games will appreciate this package which uses perspective graphics to simulate a space shuttle docking.

The idea is to dock the craft with a large wheel space station of the kind seen in 2001. This is done by careful use of directional thrusters and rocket motors, while a view of the station from the cockpit is drawn at each stage. Various aids such as status displays and targeting indicators can be called up at any time, and it is even possible to fly blind. Controls are varied and complex, but a function key label is provided and a comprehensive instruction booklet. With a little perseverance the controls are soon mastered.

Six different skill levels are provided, from a straight approach to a wildly spinning crash land. Graphics are in black and white, but highly detailed, showing every aspect of the station from a tiny wheel in the distance to a huge complex structure close up. The program does however suffer from a distinct slowness, and some warning sounds are unexplained and confusing.

If you enjoy fast action games steer clear of this, but I recommend it to anyone who wants a challenging and stimulating change. **D.A.**

instructions	95%
playability	60%
graphics	90%
value for money	80%

★ ★ ★ ★

Air Traffic Control
Dragon 32 £8

Microdeal, 41 Truro Rd, St Austell, Cornwall PL25 5JE

A first class simulation that kept me hooked for hours. It's another import from Tom Mix and has good graphics and sound.

You are asked whether your computer can handle double speed — a necessary precaution as the program could crash — and then to select level of difficulty, the greater the difficulty the more traffic. The screen shows your area of operations plus instruments in the highest resolution which in this case means black and white. The aircraft are clearly drawn with two runways in the centre.

A detailed manual explains the operations all accomplished with a joystick. It takes a little while to get used to the commands but it's worthwhile in the end. Fortunately a collision or bad landing doesn't end the simulations — you go on until no planes are left!

Points are earned for good take offs and successful landings. Landings are more difficult because you take manual control to glide in with crosswinds increasing the difficulty.

M.P.

instructions	95%
playability	90%
graphics	95%
value for money	100%

★ ★ ★ ★ ★

Nightflite 2
Spectrum
£7.95

Hewson Consultants, 60A St Mary's St, Wallingford, Oxford OX10 0EL

Reading the insert's 11 pages with 5,000-plus words in fine type, proved a mammoth task, as did reviewing this program. For flysim aficionados this is surely a must — and all in 16K, thanks to being efficiently written in machine code.

Loading was simple and revealed a menu offering seven modes, including two autopilot and one training mode. There are six levels of difficulty and a shifting perspective that shows the correct view of the runway and village lights from whichever direction the airfield is approached. Instruments are realistic, with three greens for undercarriage, stall warning light and alarm, variable flap controls, detailed map, four beacons, realistic limitations to the aircraft performance and engine noise varying with speed. Who can doubt that the author is an air traffic controller and pilot?

Superb sound and graphics do everything claimed. At the end a personal debrief is displayed on screen that can be printed to produce a personal record, signed by the author. An interesting, enjoyable, taxing program that would absorb the student for hours — but not for the ordinary games player, perhaps. **T.W.**

instructions	90%
playability	90%
graphics	95%
value for money	90%

★ ★ ★ ★ ★

Star Force Lander
52K BBC £6.95

First Byte, 10 Main St, Derby

When the BBC micro first burst on the world some three years ago now, I remember being enthralled by one of the new lunar lander programs my local software house was marketing. But that was three years ago and things have changed vastly, which means that far from being thrilled by this program it is rather old hat to say the least.

Admittedly, there are six different types of landing difficulty and it uses a more interesting manouverable space craft which actually turns itself round but it simply isn't enough to make the game interesting any more. The screens are fairly well laid out and the graphics are acceptable.

Unfortunately, the author decided to go for high resolution plotting and therefore uses a low number of colours which, while being accurate, means that in the current market the program is real much less attractive. It is difficult to play, however, and should provide a few hours enjoyment for those who like a challenge. The different levels involve asteroids, alien space craft firing upon you and difficult city landing pads to give variety. Key control is good and accurate but a joystick option would have been nice. Overall a fair but unexciting game. The lack of any documentation is lamentable.

D.C.

instructions	10%
playability	60%
graphics	60%
value for money	40%

★ ★

Space Mission Simulator
52K BBC £2.99

CompuSoft, 32 Watchyard La, Formby, Liverpool L37 3JU

Just look at that price again. Yes, it does say £2.99 and that includes postage and packing. That doesn't mean of course that the program is only worth about three pounds, as you will see, but it is nice to see at least one supplier selling his wares at a reasonable price.

What is this game then? It's based around the idea that you have to scramble for a mission to repel invaders and follows the path you must take to do so. First you have to move as fast as you can to get to your ship. Then you have to carry out all the flight checks and fuelling that your aircraft requires before finally taking off and shooting the baddies.

The final part is rather more like a navigation program than an invader game but is still quite interesting. There is certainly nothing of special note about this game, but then what can you expect for the money? It is, however, very well done and has some addictive qualities as I found as I tried to get it to rate my efforts above Disgraceful! Certainly a buy for your spending money. Don't be put off by the price. It is really worth about £5.

D.C.

instructions	60%
playability	80%
graphics	75%
value for money	95%

★ ★ ★ ★ ★

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"Vengo"

"Vengo"

"Vengo"

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Load the ship before you're fired with my Crazy Craneman game for the unexpanded VIC-20.

The screen shows a crane on the quay with its jib moving in and out and there's a ship at the dock moving backwards and forwards.

It's your job to press a key at the right time to lower the cable and pick up the crates and then deposit them on board the ship.

After you have successfully loaded two crates the crane becomes higher.

Note: as usual the Commodore control characters are explained in REMarks. These REMs should not be typed in.

Main Variables

H height of crane
S score
X position of ship
E position of jib
K direction of ship
M direction of jib
T time

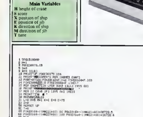
How it works

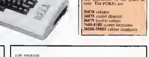
5-97 set up screen and variables
100-112 print crane and ship
150 check key depression
160-217 change direction of ship and hook
1000-1830 lower line and deposit or collect crates
5000-5100 make crane higher
8000-8040 end game
9000-9050 end game when ship loaded
10000-10030 instructions

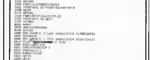
Hints on conversion

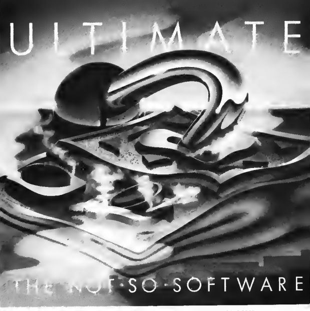
The concept of this game could be converted to almost any home computer although it uses quite a few POKEs. PEEK (203) is the key depression at the point in time. The POKEs are

36878 volume
36875 sound channel
36879 border colour
7680-8185 screen locations
38500-38805 colour locations









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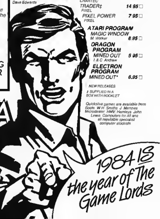
1984 IS the year of The Game Lords

Can you escape from these?

Adventures set undersea, in space and a dungeon, and with the SAS. Our reviewers tried their skills

Fishy Business Dragon 32 £9.95

Salamander, 17 Norfolk Rd,
Brighton, Sussex BN1 3AA

Supplied in the most lavish packaging I have ever seen for a Dragon games cassette this is the third part of the Dan Diamond (Sam Spade) trilogy of adventures The cassette case is larger than a video case and is moulded for cassette and the well-produced booklet which contains pictures of the adventure The idea with these adventures is that they contain no graphics, all the pictures being in the booklet Time and memory can be saved and the pictures are of a much higher standard than if they had been on the screen.

The adventure is one of the more interesting and original for the Dragon You use the standard commands to move around and manipulate your largely undersea environment What is the aim? You are not told but there are clues all around in what people say to you, in the room descriptions and, if you had played the two earlier parts, in those as well Salamander says, however, that you can play this adventure without having played the previous two

I found it a challenge, quite amusing (watch out for the red herrings) and worth the price

C G

instructions	60%
playability	70%
graphics	n/a
value for money	80%

★ ★ ★ ★

SAS Assault 48K Spectrum £6.95

Mikro-Gen, 24 Agar Crescent,
Bracknell, Berks

Having reviewed Mikro Gen's superb chess program, I was expecting something outstanding here I was greatly disappointed

It's a sort of adventure game in two parts, written in BASIC You are to rescue a kidnapped Ambassador and return him safely to London in order to avert war

In part one, you arrive at a farmhouse and the game begins It works by describing the scene then offers two or three alternatives only Having chosen, you are presented with result of your choice and the game goes on More often than not you die quite quickly, as do your companions The now clichéd Funeral March announces your demise together with a graphic gravestone After a number of deaths you learn the correct responses which allow you to kill off a few terrorists and wander round the farmhouse some of which is pictured in monochrome At this point you may be lucky enough to have built up sufficient "skill" to enter part two, on the other side of the cassette Regrettably, this contains more of the same

D M

instructions	70%
playability	85%
graphics	60%
value for money	50%

★ ★

Kosmic Pirate 48K Spectrum £5.65

Elephant, 41 Haymill Rd,
Burnham, Berks SL1 6NE

This adventure/arcade is really original Why? Because you're the baddie! You're cast as captain of an out-dated spacecraft, Red Beard 2, wreaking havoc by zapping innocent spaceships

After you have successfully disabled a craft you are at liberty to send your crew of drones and cellular beings on board to plunder anything which might be of future use

Beware at all times of disaster It's an old ship and reliability isn't guaranteed Beware also of your crew

Apparently the craft was built by the OOzas who you have presumably left strewn in little pieces across the galaxy It is said that ENTER was mystical to them so you are warned not to touch that key Do take this advice

The attack simulation gives some of the best 3D effects I have seen but the controls are erratic

Should your score exceed 9 000 you will be transported to earth as world dictator Your first task is to have tea After that you're really on your own

C B.

instructions	85%
playability	85%
graphics	95%
value for money	95%

★ ★ ★ ★ ★

Space Adventure One 32K BBC £7.95

First Byte, 10 Main St, Derby

Reviewing adventure games is never easy One very rarely has time to finish them by the deadline and can only get a flavour before having to put pen to paper You do, however, get time to see how the program reacts both to your imbecilic responses and in terms of pure speed

This is a text-only adventure entirely in BASIC the explanation for its extremely slow responses which tend to be very frustrating indeed They might not be too bad if you were allowed to type ahead, but this is not possible either So you are left to wait and think while the program does its best

It is also not a large adventure having only 34 discrete rooms despite appearing to have more due to dead ends etc When this is compared to the Level 9 adventures also for the BBC, with more than 200 rooms then one has a right to feel somewhat cheated There is no real help facility — only the shortest of curt messages — and, while there are a lost of objects to manipulate the room descriptions are very short The story line is reasonable but fairly standard and rather humourless The only instructions you get are on screen All told a rather plain program of no particular merit

D.C.

instructions	10%
playability	50%
graphics	n/a
value for money	30%

★ ★

Skull 48K Spectrum £6.95

Games Machine, 40 Fretherne
Rd, Welwyn Garden City, Herts

Green slimy moss covers the crumbling walls of the dark dungeon In semi-darkness you stumble through catacombs with one thought spurring you on there must be some point to this game!

There isn't This arcade/adventure lacks the goal that has made its cousins Atic Atac and Halls of the Things so popular

There is absolutely no means of escape from a 3D maze inhabited by the gruesome skulls You must simply stay alive for as long as possible, avoiding creepy craniums while picking up coins and gems for points Occasionally you stumble across a crucifix to ward off the skulls You are provided with a map, but this slowly disintegrates

The 3D effect is well created and the screen is rapidly re-drawn as you move about, but the skulls are not as intimidating as the blurb would have them

A lot of time has gone into the presentation of this package At the start the screen slides into place very effectively Your defeat is represented by blood trickling down the screen There is also a facility for saving, loading and merging your high scores which is very useful and should become the norm Not a first then in game technique, but a first in presentation

T.B

instructions	100%
playability	65%
graphics	80%
value for money	85%

★ ★ ★ ★

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ONE WOMAN'S VIEW

St Georgina and Dragon

In the beginning, I thought it only fair. After all, I've got the cat, my daughter's got a boyfriend, so it seemed only right that my husband should have something too.

Now he has — and I don't like it at all!

I've met gardening widows and golfing widows, I've met wives who've been ditched for the au pair. But I've never yet met one who's been deserted for a Dragon. Except me!

It's supposed to be a friendly dragon — it says so on its box — but I don't trust it. Mind you, when my husband's there, it's always perfectly civil, and it said "Hello, Mary" most politely within minutes of taking up residence. But it's worming its way into my husband's life in a most underhand way.

When he gets back from work, he has to pass its lair — my dining room that was — en route for the kitchen. There am I, slaving away over a hot microwave, creating something tasty for his tea. The other night I'd made a complete sweet and sour for four before it even let him out to give me my six o'clock peck on the cheek. Barely time for a quick, "Had a good day at work, dear?" before he's off again, and for the rest of the evening he's holed up with it, INPUTting, LISTing and RUNning for all he's worth.

It's gradually, insidiously, devouring the rest of the household. It has persuaded my husband to buy it some joy sticks, so now he and my daughter go and keep it company in the evening. Even the cat is, treacherously, showing signs of being captivated by its grunts and graphics. It has demanded a new tape-recorder to play its programs, it has become inseperable from the spare telly that I used to watch in bed, and what it wants floppy discs for, I just don't know. We now have to eat in the kitchen because it doesn't like being disturbed in the dining room. But when guests were expected to balance plates on their knees in the lounge, instead of sitting down to a decent meal, I knew it had to be war.

I am, even now, embarked upon my Terrible Revenge. Initially, I contemplated amputating its wires, or performing major surgery on its insides, but I'm not going to lower myself to use brute force. I shall match cunning with cunning. Which is why, last week, I enrolled on a computer course. I am working on a self-destruct program to load into it when it's not looking. In the meantime, I shall pretend to be its friend. While learning about loops and string variables, I'm disarming it by letting it beat me at all the games we play together.

Last night, incidentally, I was playing a really good game with it. So good that I got up early this morning to carry on with it before breakfast. And there's no doubt about it — it is far easier eating in the kitchen, besides which, my improved typing speed has been noted admiringly at work.

Now in case you're thinking that I've fallen into that old "if you can't beat them, join them" routine, I haven't. I'm just not letting my family be taken over by a computer, and I'm their St Georgina, galloping, whether they like it or not, to the rescue. In the meantime, where was I? Ah, yes

1200 PRINT AT 930 "YOU HAVE WON. I GIVE UP."

Or have I?

Mary Tweddle
Dragon slayer
Solihull

● This space is for you to sound off about the micro scene, to present bouquets, to hurl brickbats or just to share your opinions or experiences. Contributions from individuals earn a fee. Send your views to Paul Liptrot, Editor, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB

Make measures meaningful — type in a bar chart

It's easier to understand figures with a bar chart. Steve Money explains how it's done, with programs to use, in an article from his new book, Spectrum Graphics and Sound, published by Granada

By using a computer we can readily carry out lots of measurements or calculations and end up with enormous arrays of numbers

Having produced all of these numbers one method of presenting them is to produce a list or perhaps a table of figures Unfortunately such a table or list of numbers is not particularly helpful when we come to interpret the results

When examining a list of results we are usually more interested in the way the results are changing rather than the precise numbers A much better method of displaying results is to show them visually using a graphics display or perhaps a chart

Such a graph or chart usually shows each result as either a varying length line or perhaps as a dot whose height above some reference line is proportional to the quantity being displayed One of the simplest types of display is the variable length strip display and an example of this in real life is the everyday mercury thermometer

Let us start by looking at the production of a thermometer type display using the low resolution mosaic graphics symbols provided on the Spectrum

In a conventional mercury thermometer the length of the columns of mercury indicates the temperature We can represent the mercury column by drawing a simple vertical bar whose length is proportional to the measurement it represents, in this case temperature

The thermometer tube can be shown by drawing a box in a different colour around the measuring column The height of this box must be sufficient to allow the measuring column to reach the maximum value that we want to display

In order to make sense of the reading of a thermometer we need a scale

On a real thermometer this is normally drawn on, or alongside, the thermometer tube On our display we shall draw the scale alongside the measurement column Minus signs are used as graduation marks to show the calibration of the length of the column and some of these also have a number alongside which shows the corresponding temperature in degrees C In this case only the lowest and highest temperature points are marked in this way

As the temperature changes the length of the vertical column changes in sympathy and the top of the column indicates the measured temperature

Suppose we want to measure from 0°C to 100°C The mosaic symbols allow us to draw in steps of half a text character space at a time so the maximum possible number of steps from the top to the bottom of the screen is only 44

A convenient length for the column might be 20 units Each block in the column therefore represents 5°C At this point we can draw the thermometer tube The bottom of the tube is produced by printing mosaic symbols with codes 129,131 and 130 roughly at the middle of text row 20

A loop is then used to draw the tube itself and the graduation marks by printing symbols in successive lines moving up from line 20

Finally the top of the tube is produced by printing three mosaic symbols on line 8 and the scale calibrations are printed at appropriate positions alongside the thermometer tube

To draw the mercury column the temperature reading is first scaled into 5° steps by dividing it by 5 Note here that 5 is first added to t before it is scaled This takes account of the fact that the – sign indicating 0°C is actually halfway up the lowest symbol position in the mercury column After scaling the temperature value is rounded off and converted to an integer number y

Next a loop is set up with a limit of y/2 since there are two steps per symbol position This loop prints completely filled character spaces working up from the bottom of the tube giving a length rounded down to the nearest 10°

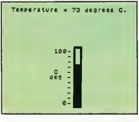
Finally y/2 is compared with INT(y/2) to see if a further 5° step is needed and if so the next higher character space is filled with a half block symbol

Program 1 produces the thermometer display on the low resolution screen Random temperature readings are displayed as text at the top of the screen and also on the thermometer display In this program before each new temperature is displayed the previous reading of the mercury column is erased by printing solid blocks in all of the column positions using INVERSE which effectively resets the column to the background or PAPER colour The mercury column itself is drawn in red INK colour The result on the screen is as shown in **Figure 1.**

Of course, the vertical column may be used to represent any quantity you like so this display could be used as a fuel gauge, speed indicator or even to indicate relative scores in a game

An alternative form of presentation would be to have the moving indicator strip horizontal so that it acts like the speedometer displays sometimes fitted to cars In choosing the layout ▶

Figure 1 — typical display from Program 1



```
Temperature = 73 degrees C.
```

and screen position of these strip displays it is important to avoid having two different ink colours in any symbol space

A major problem with the thermometer display using the low resolution graphics mode is that it can only resolve quite large steps in the quantity being measured

By changing to the high resolution mode we can produce a rather more accurate readout. It is perhaps slightly easier to draw the tube and column using high resolution graphics but in order to add text to the display the graphics drawing needs to be carefully placed relative to the text symbol positions

This is also important to avoid colour problems since graphics colours are tied to symbol spaces

The tube is easily drawn as a rectangle using PLOT and DRAW commands Producing the scale marks is quite straightforward and uses DRAW commands in a loop For convenience the scale mark for 0 is drawn separately before the start of the scale mark loop The scale calibration values and the legend 'deg C' are simply printed at the appropriate positions by using PRINT AT commands

Drawing the mercury column involves producing a filled rectangle of height t units The temperature scaling in this case is 1 1 and the maximum height of the mercury column is set at 100 screen units

With the high resolution thermometer there is no need for the 5° offset that we used for mosaic graphics since the scale graduation marks can be drawn at any required point on the screen However, the position of the tube does need to be chosen so that the text symbols line up with then calibration marks

The actual column is filled in by drawing six vertical lines alongside one another with each line of length t units To take advantage of the DRAW command alternate lines are drawn up and down respectively relative to the cursor position and x is increased by one unit after each line is drawn

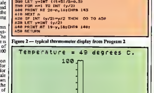
Program 2 draw a thermometer style display using high resolution graphics, and the results on the screen are shown in **Figure 2.** Of course the gauge can also be drawn with the moving measurement bar horizontal.

This means rearranging the drawing sequence to produce horizontal lines instead of vertical ones and again the calibration numbers and text for labelling needs to be placed in appropriate positions relative to the actual measuring strip

Program 1 — thermometer display using mosaic graphics

```
100 REM Thermometer by mosaic graphics
110 CLS
120 INK 0: PAPER 7
130 LET xo=110: LET yo=16
140 REM Draw thermometer tube
150 PRINT AT 20,15;CHR$ 129;CHR$ 131;CHR$ 130;
160 FOR n=1 TO 11
170 PRINT AT 20-n,14;"-";CHR$ 133;CHR$ 128;CHR$ 138;
180 NEXT n
190 PRINT AT 0,15;CHR$ 132;CHR$ 140;CHR$ 156)
200 REM Draw Scale
210 PRINT AT 19,13;"0";
220 PRINT AT 9,11;"100";
230 PRINT AT 13,11;"C";
240 PRINT AT 14,10;"deg";
250 REM Display loop
260 FOR k=1 TO 100
270 LET t=INT (100*RND)
280 INK 1
290 PRINT AT 1,2;"Temperature = ";t;
300 PRINT " degrees C.    "
310 GO SUB 500
320 PAUSE 200
330 NEXT k
340 STOP
500 INVERSE 1
510 REM Erase previous reading
520 FOR n=1 TO 11
530 PRINT AT 20-n,14;CHR$ 143;
540 NEXT n
550 INVERSE 0
560 REM Draw new reading
570 INK 2
580 LET y=INT ((t+5)/5+0.5)
590 FOR n=1 TO INT (y/2)
600 PRINT AT 20-n,14;CHR$ 143
610 NEXT n
620 IF INT (y/2)=y/2 THEN  GO TO 650
630 LET y=INT (y/2)
640 PRINT AT 19-y,14;CHR$ 140;
650 RETURN
```

Figure 2 — typical thermometer display from Program 2



Temperature = 49 degrees C.

In this program the temperature values are generated randomly by the computer and then displayed together with a printed readout of temperature at the top of the screen

By using a suitable input-output interface the Spectrum might be connected to an electronic thermometer In this case the reading of temperature may be fed into the Spectrum and then displayed so that the screen display acts as if it were a real thermometer

Whilst the thermometer style display is useful to show the current state of some measurement, a more useful arrangement would be to show how the situation varied over a period of time

We could perhaps measure the temperature at noon on each day of the week A display showing this information can easily be arranged by drawing the thermometer displays for the days of the week alongside one another For this display only the variable length bar is drawn for each day and a single scale is included at the left-hand side To improve visibility the bars may be drawn with a gap between adjacent bars

This type of display is referred to as a histogram but is more commonly called a bar chart

Bar charts are not normally intended to provide particularly accurate displays since their main application is to show the general trend of the variable being displayed

They are frequently used in business applications to show the trend in sales over a year, or perhaps the stock level, number of orders, or income over a period It is very easy to see the trend of the results on such a chart

A useful enhancement of the bar chart is to arrange that the colour of the bar is changed if its level goes above, or perhaps below, some predetermined limit This can provide an easily recognised warning that a situation is becoming dangerous or needs attention In such cases either the whole bar changes colour or the part above the limit line might change colour

The low resolution mosaic graphics can be used to draw a bar chart since, although the vertical resolution is relatively coarse, the resultant display can be quite effective for this type of chart

Program 3 draws a bar chart using mosaic graphics In this program a separate bar is drawn for each day of the week and each bar is drawn using the same technique as for the mercury column in the thermometer program

The data in this program is read into an array so that the drawing of the bars can use a common drawing loop It could easily be arranged that the temperature data is typed in from the keyboard by using an INPUT statement instead of READ to set up the temperature values

The display produced on the screen is as shown in **Figure 3.** By altering the scales and legends this program can readily be adapted to display any desired variable on the chart

Program 4 draws a bar chart using high resolution graphics and the result on screen is shown in **Figure 4.** In this program the bars have been drawn in a different wsy from those of the thermometer

Here the loop limit is set to the desired reading in screen units and a series of short horizontal lines is drawn with one line above the other to produce the filled bar This technique involves more passes around the loop than the vertical line version but is equally effective in producing bars

As in the case of the thermometer, the position of the bars relative to the text symbol positions must be carefully chosen to avoid problems with display colour

● Spectrum Graphics and Sound, £6.95 for 195 pages, covers techniques to use in programs, including games, three-dimensional displays, sound effects and music. The 10 chapters include listings to type in.

Program 2 — high resolution thermometer display

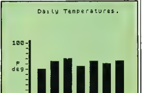
```
100 REM Hi-res thermometer
110 CLS
120 INK 0: PAPER 7
130 LET xo=118: LET yo=16
140 REM Draw thermometer tube
150 PLOT xo,yo
160 DRAW 10,0
170 DRAW 0,100
180 DRAW -10,0
190 DRAW 0,-100
200 REM Draw Scale
210 PLOT xo,yo+4
220 DRAW -3,0
230 DRAW 3,0
240 FOR n=1 TO 10
250 DRAW 0,10
260 DRAW -3,0
270 DRAW 3,0
280 NEXT n
290 PRINT AT 19,13;"0";
300 PRINT AT 6,11;"100";
310 PRINT AT 13,12;"C";
320 PRINT AT 14,11;"deg";
330 REM Display loop
340 FOR k=1 TO 100
350 LET t=INT (100*RND)
360 INK 1
370 PRINT AT 1,1;"Temperature = ";t;
380 PRINT " degrees C.    "
390 GO SUB 500
400 PAUSE 200
410 NEXT k
420 STOP
500 INVERSE 1
510 REM Erase previous reading
520 PLOT xo+2,yo+1
530 LET y=104
540 FOR n=1 TO 6
550 DRAW 0,y: DRAW 1,0
560 LET y=-y
570 NEXT n
580 DRAW 0,y
590 INVERSE 0
600 REM Draw new reading
610 INK 2
620 PLOT xo+2,yo+4
630 FOR n=1 TO 6
640 DRAW 0,t: DRAW 1,0
650 LET t=-t
660 NEXT n
670 DRAW 0,t
680 RETURN
```

Program 3 — bar chart using mosaic graphics

```
100 REM Simple bar chart
110 REM using mosaic graphics
120 BORDER 3
130 INK 0: PAPER 7
140 DIM d$(7,2): DIM t(7)
```

```
150 REM Set up data
160 FOR n=1 TO 7
170  READ d$(n),t(n)
180 NEXT n
190 DATA "Mo",60,"Tu",65,"We",80
200 DATA "Th",55,"Fr",65
210 DATA "Sa",70,"Su",65
220 REM Draw scales
230 FOR n=1 TO 22
240 PRINT AT 19,7+n;CHR$ 131
250 NEXT n
260 FOR n=1 TO 11
270 PRINT AT 19-n,7;"-";CHR$ 138
280 NEXT n
290 FOR n=1 TO 7
300 PRINT AT 20,7+3*n;d$(n);" ";
310 NEXT n
320 PRINT AT 18,6;"0";
330 PRINT AT 8,4;"100";
340 PRINT AT 12,5;"F";
350 PRINT AT 13,4;"deg";
360 FOR j=1 TO 7
370 GO SUB 500
380 NEXT j
390 PRINT AT 2,10;"Daily Temperatures."
400 STOP
500 INK 2
510 REM Draw bar
520 LET y=INT ((t(j)+5)/5+0.5)
530 FOR n=1 TO INT (y/2)
540 PRINT AT 19-n,7+3*j;CHR$ 143;CHR$ 143;
550 NEXT n
560 IF INT (y/2)=y/2 THEN  GO TO 590
570 LET y=INT (y/2)
580 PRINT AT 19-y,7+3*j;CHR$ 140;CHR$ 140;
590 RETURN
```

Figure 3 — display produced by Program 3

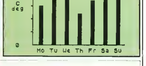


Program 4 — high resolution bar chart listing

```
100 REM High res bar chart
110 CLS
120 BORDER 3
130 DIM d$(7,2): DIM t(7)
135 REM Set up data
140 FOR n=1 TO 7
150 READ d$(n),t(n)
160 NEXT n
```

```
170 DATA "Mo",15,"Tu",18,"We",25
180 DATA "Th",12,"Fr",17,"Sa",20,"Su",18
185 REM Draw axes and scales
190 INK 0
200 LET xo=48: LET yo=20
210 PLOT xo,yo
220 DRAW 168,0
230 PLOT xo,yo
240 FOR n=1 TO 6
250 DRAW 0,20
260 DRAW -3,0
270 DRAW 3,0
280 NEXT n
290 PRINT AT 20,7;;
300 FOR j=1 TO 7
310 PRINT d$(j);" ";
320 NEXT j
330 PRINT AT 19,2;"0";
340 PRINT AT 4,2;"30"
350 PRINT AT 11,2;"C";
360 PRINT AT 12,1;"deg"
365 REM Draw bars
370 INK 2
380 PLOT xo,yo
390 DRAW 4,0
400 FOR k=1 TO 7
410 DRAW 8,0
420 LET y=t(k)*4
430 FOR n=1 TO 4
440 DRAW 0,y
450 DRAW 1,0
460 DRAW 0,-y
470 DRAW 1,0
480 NEXT n
490 DRAW 8,0
500 NEXT k
510 REM Print legend
520 INK 1
530 PRINT AT 2,6;"Daily Temperatures";
540 STOP
```

Figure 4 — high resolution bar chart from Program 4



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I have seen other chess games for computers, but as far as I am concerned, this is the best so far, and should give hours of enjoyment to the chess buff **B.B.**

instructions	95%
playability	100%
graphics	75%
value for money	100%

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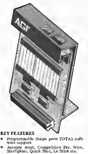

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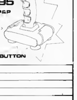

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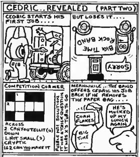
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Neptune's Daughters

English Software, Box 43,
Manchester M60 3AD

Neptune's daughter has been captured by an evil Sea Serpent and your aquaman's mission is to swim through the underwater caverns to rescue her, armed with a harpoon with which to shoot away the sucker plants blocking his way and kill the octopuses and other sea monsters

What the other monsters are like I never discovered, as my skill with a joystick was not sufficient for this game, but I'm getting better — I'll rescue the fair maiden one of these days!

It's a challenging and quite addictive game, with good graphics and reasonable sound effects I would have preferred though, to return to the start of the current screen on losing a life instead of going right back to the start of the game every time High scores can be obtained quite easily by standing your ground and shooting octopuses, but that's not really the point of it the challenge is to complete the mission, not to score thousands of points without going anywhere

The high score table is a definite weak point Otherwise, though, it's a well written and constructed game **M N**

instructions	75%
playability	80%
graphics	85%
value for money	85%

★ ★ ★ ★

Super Pipeline £6.90

Taskset, 13 High St, Bridlington
YO16 4PR

Now this is a game worth having As in most good games, the scenario is simple You control a man whose job is to oversee the operation of an oil pipeline The problem is that a saboteur keeps climbing to the top of the screen and dropping plugs which stop the oil flow When this happens your man summons a fitter who, with a hammer, removes the plug The bad news is that there are Venusian spiders and lobsters which walk along the pipe and, if given the chance will savage the fitter or your little man

Graphically the game is superb with nice use of the shades of grey to give a 3D effect to the pipeline The animation is brilliant The high spot is the use of sound Throughout the game music of the highest standard is played

The usual options of pause, choice of level, number of lives, starting screen, joystick/keyboard option etc are available In all a testing game which has been programmed immaculately Get it and enjoy **A W**

instructions	70%
playability	100%%
graphics	95%
value for money	100%

★ ★ ★ ★ ★

Neoclypse

PSS, 452 Stoney Station Rd,
Coventry CV6 5DG

This is a truly amazing game Its loading time of over 22 minutes hint at its length and complexity The game is of the Defender/Scramble concept and gives you a small plane flying over a changing terrain The graphic detail of the ground shows factories cranes space ships on launching pads etc all superbly depicted The scenario is of you being the good guy Vs the bad guys who have taken over the planet Neoclypse It is divided into four quadrents and in each quadrant is a number of radar towers each defended by an enemy ship Your job is to shoot the ship and duck down between the buildings to blast the radar tower Normally you are destroyed if you hit the ground Different levels bring more bad guys per quadrant and later on there are ground to air homing missiles

The long loading time might put some people off, but the game is well put together and is very addictive as it had me playing it for hours The graphics are amazing, the sound is good and there are quite a lot of options to chose from **M R**

instructions	100%
playability	98%
graphics	85%
value for money	80%

★ ★ ★ ★ ★

Domino6/ Domino 9 £4.99

Challenger Computer Software,
24 The Woodfields Sanderstead,
S Croydon, Surrey

Domino 6 follows the principles of the popular pub game of dominoes very closely and fulfils all the needs of an avid player (although you will have to provide your own beer!)

Play is against the computer First a choice of dominoes is made from the pool and play starts as usual with the placement of the highest double

The graphics were good although they couldn't be described as spectacular and despite my best efforts the game proved to be crash proof

The instructions are clear and concise Also included in the game are three levels of play but I couldn't distinguish between them! Domino 9 is the same game with nine spots on each side of the domino piece This makes life a little more difficult, but the snag is that a stalemate is reached much more frequently and in my view spoils the game

As a slight improvement for both games I would introduce different colours to correspond with the numbers of spots, thus making the game suitable for youngsters who don't know their numbers yet

However the games are good value as they stand and are recommended **V R**

instructions	85%
playability	90%
graphics	75%
value for money	90%

★ ★ ★ ★

Supermind/ Diomond Code £4.99

Challenger Computer Software,
24 The Woodfields Sanderstead,
S Croydon, Surrey

Most people are familiar with the popular board game of Master Mind where, by using combinations of different coloured pegs a hidden code has to be deciphered

Well Supermind is a computerised version and for regular players of the board game should prove to be an interesting diversion

There are three levels of play involving four, six and eight colours respectively As in the board game black and white markers are used to identify correct peg positioning

Diamond Code is the second game on this cassette and is similar to Supermind but with a diamond shaped colour pattern to be found The rules for this game are more complicated, with about twenty screens of information to run through, including a demo There are four levels of play and good use is made of the graphical qualities of the C64

The main drawback for both games is the lack of written instructions for only brief details are given on the cassette insert Other software houses produce copious notes in detail so why not for these quite complicated games **V R**

instructions	10%
playability	50%
graphics	75%
value for money	80%

★ ★ ★

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Humpty Dumpty Mystery/Who Killed Cock Robin? 48K Spectrum £6.25

Widgit, 48 Durham Rd, London
N2 9DT

Widgit seems to have cornered the market for high quality, educational program that will actually do what they claim for pre school and primary children

The Humpty Dumpty Mystery follows Humpty's cracking fall by presenting a platoon of the King's Men with different coloured hats, badges, eyes, mouths and jackets. By cunning questioning, you eliminate soldiers and have a guess at who pushed him. The score is based on the number of tries. Responses may be typed in, or there is a single key entry mode. Part two shows you who pushed him asks you to type back his description. Sounds easy? You ought to try it!

Who Killed Cock Robin? is back to deduction. Can you identify murderer, time and place? The game features several levels of difficulty.

Graphics are great, as is the sound. A really slick, professional package, which will teach and test you as well as your children **B.M.**

instructions	90%
playability	100%
graphics	100%
value for money	100%

★ ★ ★ ★

Test Your Child Series: Arithmetic VIC-20 £9.99

Commodore, 675 Ajax Ave, Slough Berks

The package, which needs 16K expansion, consists of two tapes and an instruction book which also contains progress and rating charts. The tapes test all aspects of basic primary arithmetic, addition, subtraction multiplication division, fractions and finally give a series of problems dealing with them.

The first four programs are for the full age range (seven to 11). The fraction tests start at nine and the problems at eight. For all of the tests a pencil and paper is a recommended extra — as the tests progressed they become more of a necessity.

Throughout the tests, sound tones indicate whether the answer is correct or not. At the end of the test, any incorrect problems are re-run for a second attempt. As this is not a teaching aid, no guidance is given as to how or why the answer was wrong.

The child doing the test should be able to run the program alone or, if preffered, the parents can sit with the child.

All in all, a very handy tool for any parent or teacher who wants to check on the arithmetic progress of a child **M.W.**

instructions	90%
ease of use	90%
display	70%
value for money	85%

★ ★ ★ ★

Graphs Maths Tutor 32K BBC/Electron £7.95

Salamander, 17 Norfolk Rd, Brighton BN1 3AA

Another in a series designed with 'O' and 'A' level students in mind. It comes in a large box with comprehensive manual and five programs. There are instructions to transfer to disc.

Each section enables the student to proceed individually with the first two programs allowing for group work. As with other programs in this series, the aims and objectives are clearly stated in the manual. Included here are demonstration examples as well as sample questions that aid learning.

The last three programs involve answering multiple choice questions about "graphical representations of equations". Some of the ground covered includes variations on the sine cosine and tangent curves, straight line graphs, quadramatic and cubic curves.

It's a very straightforward set which can only benefit the student. All responses are kept as simple as this subject allows which is a good reason for having the multiple choice format were applicable. Graphics are well presented giving instant response. Good revision material at the end of the school year **M.P.**

instructions	100%
ease of use	90%
display	60%
value for money	80%

★ ★ ★ ★

Vectors Maths Tutor BBC/Electron £14.95

Salamander, 17 Norfolk Rd, Brighton BN1 3AA

This tape comes in a large video type package complete with 12-page manual. Loading was no problem and I was pleased to see all the contents were easily transferable to disc. There are 14 progrms and, although it seems a daunting task, it's certainly worthwhile.

It must be appreciated that these programs of themselves will not cover the whole area. It is assumed that the student will "have access to other modes of learning". The aim is to cover some of the aspects as required in GCE Additional Mathematics, A level Mathematics and other exams.

Each program is self contained unit, well documented, that allows the student to work individually or in a small group. It is important to work through the programs in order, however, as many reinforce previous work.

As a highly structured approach it is designed for the home, as a form of revision or for school, the latter allowing group work. I was very impressed with the stated objectives written into the manual for each section which covered new ground.

It's very much in line with programmed learning and rather dry in its approach but remembering my own 'O' level days, that's precisely what I needed, a no-frills run through of the essentials **M.P.**

instructions	100%
ease of use	90%
display	70%
value for money	90%

★ ★ ★ ★

Maths Race TI-99/4A £5

Firefly, 48 Dorset St, London
W1H 3FH

This is designed to test 7-12 year olds on their basic arithmetic skills, but adds incentive to their learning by taking the form of a simple car race.

The screen displays a race track with two cars. Questions are then asked on addition, subtraction multiplication, division or various combinations depending on which of seven options was chosen before the race began. If a question is answered correctly the player's car is advanced. An incorrect response results in the computer's car being moved twice as far. The race ends when either car passes the finishing line and one point is scored by the winner of that round.

In the seventh option, where all the arithmetic skills are tested, a bug consistently upset the display. When some division question were answered a NUMERIC OVERFLOW IN 1240 caused the display to be partially scrolled off the screen.

The level of difficulty is selected from four which determines whether numbers the generates will be under 6, 11, 16 or 21. This is reasonable for most levels but an upper limit of 20 for division seems too low to offer much variety or challenge in the questions. Needs Extended BASIC **J.W.**

instructions	90%%
ease of use	80%%
display	80%
value for money	75%

★ ★ ★ ★

Can you climb ladders and avoid the spiders?

If you hate spiders, don't type in this game. They're after you as you climb the ladders — and avoid the holes — in G. A. Power's program for the 32K BBC or Electron computers

You've got ladders to climb, holes to jump and spiders to avoid in Jumpman, my arcade-style game for the 32K BBC micro and the Electron

To make things more difficult your man, who starts at the bottom of the screen, continually moves forward unless you press the asterisk key for reverse. Key A makes him jump

If you get to the top the screen clears and another more difficult set of ladders and holes is drawn

If your man falls the game ends and you are given the option of a new game

The program occupies 3K and was written on a model B BBC micro with 1 2 operating system

Tip 1: Do not enter line 40 until you are sure you have typed in the program accurately

Tip 2: If you wish, exclude the whole of PROCRULES until you have time to type it in

Hints on conversion

This program was written in BBC BASIC Here is an explanation of some of the commands

MODE 1 the program requires a four colour screen — background and three foreground
POINT returns the colour of a specified point on the screen
TIME an easy way of timing a delay Another method may be used if your computer has no clock
PROC all PROCedures can be replaced by GOSUBs and ENDPROCs by RETURN
% represents an integer variable and it is not essential
DIV gives the whole number result of the division of two numbers For example 11 DIV 4 gives 2 Again, not essential
50 VDU 23 8202 0 0 0 simply turns off the cursor and prevents flashing at the screen edge
160 *FX11,1 speeds up auto repeat on the keys and is not essential It is re set by *FX12,0
***FX21,0** flushes the keyboard buffer

Variables and arrays

X%, Y%, d% man's X Y position and present direction
J% current jump condition — zero = normal 1 = key A has been pressed 2 = man is in the air
T% timing variable for J%
SX%, SY%, SD% position and direction of spider
PC colour of character below spider
S%(4,1) stores spider co-ordinates
D%(4) stores spider directions
GAME number of games played
NG new game? True/false

```
   10 REM***************************
   20 REM**  G.POWER 2/1/84    *****
   30 REM***************************
   40 ON ERROR REPORT:GOTO1190
   50 MODE1
   60 VDU23;8202;0;0;0;
   70 VDU23,225,255,255,255,255,0,0,0,0
   80 VDU23,226,195,195,195,255,255,195,195,195
   90 VDU23,227,24,24,16,254,16,24,36,102
  100 VDU23,228,28,28,28,28,127,62,28,0
  110 X%=3:Y%=28:d%=1:J%=0:T%=0:U%=0:D=0:B=0:SX%=0:SY%=
1:SD%=1:DIM S%(4,1):PC=0
  120 DIM D%(4):D%(0)=-1:D%(1)=-1:D%(2)=1:D%(3)=-1:D%(4)
=1
  130 GAME=1:NG=FALSE:B=1
  140 TIME=0
  150 PROCRULES
  160 *FX11,1
  170 PROCINITIAL
  180 REPEAT
  190 COLOUR3
  200 PRINTTAB(34,1);(TIME/100)
  210 PRINTTAB(13,1);"GAME ";GAME
  220 PROCINPUT
  230 PROCMOVE
  240 PROCSPIDER
  250 PROCCHECK
  260 UNTILNG=TRUE
```

How it works
PROCedures

280-420 PROCRULES prints instructions and control keys
430-570 PROCINITIAL is called at the beginning of each game It resets variables X%, Y% and d% and arrays S% (4 1) and D%(4) and draws a new maze
580 PROCINPUT inputs a character from the keyboard and acts by changing man's direction or initiating a jump
620-630 flushes the keyboard buffer, as *FX11,1 will probably cause it to take in many repeats of the key pressed
650-780 PROCMOVE blanks out man goes through his move logic and re prints him at his new position The rough structure is 670 whether to start a jump, 680 if man is jumping is jump over? 690 gives colours of points below and above man, 700 colours on either side of man, 710 has he been bitten? 720 is he above hole/falling? 730 is he directly below a ladder? 470 is he on a "landing", 750 760 is he within playing area?
800 920 PROCSPIDER moves all spiders in turn, using a simple FOR TO NEXT loop The values in the arrays are taken out updated and re-inserted 830 colour below spider, 840 move logic for hole, 850 move logic for landing, 860 within playing area? 870 blank out old spider 880 update values, 890 print at new position, 900 if spider is at bottom left move to original start position
950-1020 PROCBITE is called from PROCMOVE when a spider is beside the man The game stop temporarily and a sound is made Variable B is increased by 1
1030-1060 PROCCHECK checks if man has been bitten three times (B = 3) in which case game ends 1050 checks if man has reached home, in which case GAME = GAME + 1 and a harder maze is drawn

```
  270 NG=FALSE:GOTO170
  280 DEF PROCRULES
  290 *FX12,0
  300 CLS:PRINT:PRINT:PRINT"DO YOU WANT INSTUCTIONS (Y/N)?" ;A$=INKEY$(500)
  310 IFA$="Y"THEN340
  320 IFA$="N"THEN420
  330 GOTO300
  340 CLS:PRINT:PRINT:PRINT" THE IDEA OF THE GAME IS TO MOVE YOUR":PRINT:PRINT"MAN ";CHR$227;" TO THE TOP LEFT HAND CORNER OF THE":PRINT;" MAZE WHERE  HOME";CHR$228;" IS PRINTED":PRINT
  350 PRINT"TO DO THIS HE MUST JUMP UP-TO AND CLIMB ":PRINT,"THE  LADDERS ,WHILE AVOIDING ,OR JUMPING":PRINT"OVER THE HOLES":PRINT
  360 PRINT"           THE MAZE IS INHABITED BY":PRINT:PRINT"FIERCE SPIDERS ,THESE SPIDERS BITE .IF":PRINT:PRINT"THE MAN IS BITTEN 3 TIMES HE WILL DIE "
  370 PRINT:PRINT"SO HE MUST AVOID THEM OR JUMP OVER THEM "
  380 PRINT "CONTROLES ARE  ......"
  390 PRINT "  A  KEY TO JUMP" "  S  KEY TO CHANGE DIRECTION"  "press anny key to start"
  400 DEL=INKEY(10000)
  410 CLS:DEL=INKEY(10):PRINT      "GOOD LUCK":DEL=INKEY(100)
  420 ENDPROC
  430 DEF PROCINITIAL
  440 CLS:CLG
  450 COLOUR3
  460 PRINTTAB(0,2),"HOME";CHR$228
  470 X%=3:Y%=27:d%=1
  480 FORY=1 TO 5
  490 FORX=0TO39:PRINTTAB(X,30-Y*5);CHR$225:NEXT
  500 FORX=1TOGAME:PRINTTAB((RND(16)+2)*2,30-Y*5);" ":NEXT
  510 FORL=1TO2:A=RND(18):COLOUR2:FORR=0TO2:PRINTTAB(A*2,30-(Y*5-R))CHR$226:NEXT:COLOUR3
  520 NEXT:NEXT
  530 FORX=0TO39:PRINTTAB(X,30);CHR$225:NEXT
  540 s%=0:GOSUB1210:s%=1:GOSUB1210:s%=2:GOSUB1210:s%=3:GOSUB1210:s%=4:GOSUB1210
  550 PRINTTAB(18,30),CHR$227;" ";CHR$227;" ";CHR$227
  560 PRINTTAB(0,30),"MEN LEFT="
  570 ENDPROC
  580 DEF PROCINPUT
  590 I$=INKEY$(1)
  600 IFI$="A"ANDJ%=0THENJ%=1
  610 IFI$="S"THENd%=0-d%
  620 *FX21,0
  630 ENDPROC
  640 REM
  650 DEF PROCMOVE:COLOUR3
  660 PRINTTAB(X%,Y%);" "
  670 IFJ%=1THEN J%=2:T%=TIME:Y%=Y%-1
  680 IFJ%=2ANDTIME-T%>10THENY%=Y%+1:J%=0
  690 D%=POINT(X%*32+16,1024-(Y%+1)*32-16):U%=POINT(X%*32+16,1024-(Y%-1)*32-16)
  700 F%=POINT((X%+1)*32+16,1024-(Y%)*32-16):B%=POINT((X%+1)*32+16,1024-(Y%)*32-16)
  710 IFF%=1ORB%=1THENPROCBITE
  720 IFD%=0ANDJ%=0THEN Y%=Y%+1:GOTO730
  730 IFU%=2THENY%=Y%-5:GOTO750
  740 IF(Y%+1)MOD5>0THENX%=X%+d%
  750 IFX%<2THENX%=2:d%=0-d%
  760 IFX%>38THENX%=38:d%=0-d%
  770 PRINTTAB(X%,Y%);CHR$227
  780 ENDPROC
  790 REM                   SPIDER
  800 DEF PROCSPIDER:COLOUR1
  810 FORs%=0TO4
  820 SX%=S%(s%,0):SY%=S%(s%,1)
  830 PC=POINT(SX%*32+16,1024-(SY%+1)*32-16)
  840 IFPC=0THENSY%=SY%+1
  850 IFPC<>0THENSX%=SX%+D%(s%)
  860 IFSX%>38ORSX%<2THEND%(s%)=0-D%(s%)
  870 PRINTTAB(S%(s%,0),S%(s%,1));" "
  880 S%(s%,0)=SX%:S%(s%,1)=SY%
  890 COLOUR1:PRINTTAB(SX%,SY%);"*"
  900 IFSY%=28ANDSX%=2THEN PRINTTAB(SX%,SY%);" ":GOSUB1210
  910 NEXT
  920 ENDPROC
  930 RETURN
  940 DEF PROCBITE
  950 VDU19,0,1;0;
  960 DEL=INKEY(10)
  970 VDU19,0,0,0,
  980 FORR=1TO8 PRINTTAB(22-R,30);"  ";NEXT
  990 PRINTTAB(0,0);"  "
 1000 SOUND0,-15,9,11
 1010 B=B+1
 1020 ENDPROC
 1030 DEF PROCCHECK
 1040 IFB>3THEN :GOTO1070
 1050 IFX%<6ANDY%<5THEN GAME=GAME+1:NG=TRUE:B=B-1
```

```
 1060 ENDPROC
 1070 *FX12,0
 1080 DEL=INKEY(30)
 1090 CLS
 1100 DEL=INKEY(200)
 1110 COLOUR3
 1120 PRINT:PRINT:PRINT:PRINT"THE GAME IS OVER" "YOU REACHED LEVEL ";((30-(Y%+2))/5)  "OF GAME ";GAME "DO YOU WANT ANOTHER GAME Y/N ?"
 1130 *FX21,0
 1140 A$=INKEY$(200)
 1150 IFA$="Y THENGAME=1:GOTO130
 1160 IFA$="N"THENGOTO1180
 1170 GOTO1130
 1180 CLS:END
 1190 *FX12,0
 1200 END
 1210 S%(s%,0)=s%*7+2:S%(s%,1)=0:D%(s%)=SGN(RND(1)-.5)

 1220 RETURN
```

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Outer space and inner space . . .

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Thrusta £5.95

Software Projects, Bear Brand Complex, Allertan Rd, Woolton, Liverpool

Like movies, all computer games are just variations of a handful of plots or themes So what makes one computer game better than another when they both have the same underlying theme? The answer to that one is not easy at times, although there are times when the answer is blatantly obvious Every now and again though you get a combination which 'clicks', and makes for a very playable game Such a combination is to be found in this game which ranks among my own personal league of addictive games The theme is simple whilst fighting off flying baddies you have to kill off a colony of something or other which are hatching out at the bottom of the screen The only thing which will kill off the hatching 'things' is a rock, or boulder, which appears at the top of the screen By nudging the rock you manoeuvre it until is eventually falls to the bottom of the screen, hopefully killing something It may sound easy and at first sight it may look easy but after two hours I had only managed to get through eight different screens My verdict different, enjoyable, and to me addictive

B.B

instructions	100%
playability	100%
graphics	100%
value for money	100%

★ ★ ★ ★ ★

Ometron 48K £5.95

Software Projects, Bear Brand Complex, Allertan Road, Woolton, Liverpool

Although it is yet another version of the 3D zap-the-aliens before they get too-close favourite this version has very fast and effective graphics After reading the limited instructions on the attractive cassette cover I loaded the game to find a well written demo routine which gave me some idea of what I was supposed to do

For no apparent reason a multitude of line drawn shapes has decided to attack your lonely space station Now I for one am not going to stand for this and let loose with my rapid fire laser cannon, only to find that one of the nasties had warped in behind me Desperately I flipped the gun turret round, but too late

If you are the budding space cadet who treats being assaulted by Pyramids, sugar cubes and coathangers as a challenge then this game should prove a valuable addition to your collection But since all the aliens adopt the same attack strategy the game becomes tedious much sooner than most of its type

T B

instructions	50%
playability	50%
graphics	85%
value for money	65%

★ ★ ★

Astroplaner 48K £5.50

Romik, 272 Argyll Av, Slough Berks

Guess what? Good Old Earth's in trouble again Apparently Zardon's fleets has been detected fast approaching Your mission is to transport mutants to the factory in your operating area, protecting them from the nasty invaders Your combat patrols are vital, defending the Earth's industrial bases

To achieve your intended aim of teleporting the mutants to the factory you have to hover just above one, then press the up and down keys together Once the mutant is on board it can be released by descending to ground level You can either take them all the way, or drop them elsewhere to walk the rest!

Easy you might think? Not a bit of it! I omitted to mention that the Zardons do not take your actions lying down (assuming that Zardons can lie down) By the time you have avoided nasty stars loosing horizontal bombs, and other assorted nasties It makes the earlier versions of Orbiter seem rather like a bun-fight at the village fete

C B

instructions	95%
playability	95%
graphics	90%
value for money	95%

★ ★ ★ ★

Tradewind 48K £5

WD, Hilltop, St Mary, Jersey, C.I

This game could have been taken from the TV series 'The Onedin Line' It has all the same elements buying a ship sailing between ports, trading with the local inhabitants, and facing the rough elements of the seas

The colour and the graphics are used to good effect to provide you with a map (different in each game) of your trading area You start by buying a ship, provisions and cargo In sailing between the four ports you face a variety of hazzards It helps if you know something about sailing before you start, although I found the sea always got me in the end

The program has a few rough edges which tend to spoil it Some messages are untidy, and when you come to an untimely end, you are told the value of your estate but the amount just flashes on and off the screen before you can read it

As a business simulation and adventure game there would appear to be too much reliance on luck A novel game, but the novelty of it soon wears off

D N

instructions	50%
playability	60%
graphics	70%
value for money	60%

★ ★ ★

Scuba Dive 48K £5.50

Durrell, Castle Lodge Castle Green, Taunton Somerset TA1 4AB

Your diver jumps into the ocean from his boat, swimming down to the sea bed collecting pearls from open oysters Avoiding the sharks, jelly fish, electric eels and other denizens of the deep requires skillful swimming, as one touch means death for one of your 3 lives Sea-bed collision knocks you unconscious too much can kill, oysters close on you and you have limited oxygen Items collected show as 'held' and only add to your main score if you can get them back to the boat which keeps moving The screen scrolls smoothly, with diver, in all directions

Four skill levels, the insert instructions fully explain and movement keys, covering rotation clock and anti clockwise, forward with acceleration or brake, are user definable The score table may be SAVEd and re-loaded The graphics are among the best I have seen — turning sharks display a 'Jaw's like' full face and the whole game is colourful creating real excitement Controls react fast and, even with joystick, the slightest mistake is fatal But too easy games are not much fun and I think this one will keep me happy for some considerable time

D C

instructions	90%
playability	90%
graphics	99%
value for money	99%

★ ★ ★ ★ ★

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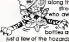
munch man 64
A fantastic version of this popular arcade game

Robin to the Rescue

In days of old when knights were bold and the sheriff was in power to play this game guide Robin Hood, to Marian locked up in the tower

New Alley Cat



Guide Thomas the cat along the 13 walls of SOLAR street to his lady friend, who awaits him on the end wall, but beware of the flying boots, bottles and mops, which are just a few of the hazards you will encounter

New Bogy Men

Guide Boris up the ladders to collect a coin from the top of the screen but beware! the bogy men are out to get you He must return to the bottom of the screen avoiding the bogy men and insert the coin in the electric meter The lights will come on enabling you to see the pitch fork and after retrieving it, kill the bogy men

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Four to get. Can you beat your partner?

An old favourite transferred onto the Commodore 64 by Peter Howe. Type it in for family fun

This is a version of the popular children's game transferred from paper to the Commodore 64.

The screen is a grid of 49 squares in seven rows of seven. Each vertical row is assigned a letter from A to G.

You press the key for the row you want and a sprite crosses the top of the screen to the selected row and then down to the square higher than previously selected. A square is then printed and the sprite disappears.

The object of the game is to get a row of four squares horizontally, vertically or diagonally, while preventing your opponent from doing the same.

Variables

A$-G$, H$-N$ cursor down, right positions

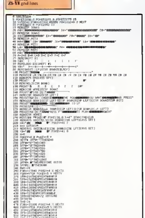
A-G position next square is to be printed

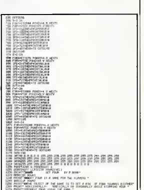
Z$-Y$ grid lines

How it works

5 colour screen
10-15 initialise sprite
20-90 initialise variables
100-130 print grid
140-186 print instructions
190-239 change colour of sprite and printed squares
240-330 gets keypress and takes action
340-450,460-570,580-690,700-810,820-930,940-1050,1060-1170 moves sprite and prints square at correct position in rows A,B,C,D,E,F,G
1180-1210 sprite data
1220-1340 prints instructions

● As usual, we have inserted REMarks describing the Commodore control characters. These REMs, and the others in the program, should not be typed in.





Will you reach the flags before the monsters grab you?

Your task is to collect the flags, but the monsters are getting faster. Type The Climber, by Alan Jarvis, into either model of the Spectrum and risk your life

The Climber is a three-screen climbing game in which you, the climber, must collect three flags on each screen before the prowling monsters catch you

The flags always appear at the same position on each screen, but the scenery around them changes

The first screen is made up totally of girder, but ladders are introduced on the following screens

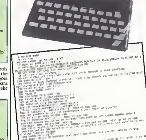
How it works
main routines

10-14 POKE graphics/graphic data
40-50 variables
200-230 main loop
300-330 man drop
500-525 man dead/game over
600-620 man jump
701-703 check attributes
900-920 collect flag/clear screen
1000-1040 set screen
2001-2005 girder data
3001-3005 ladder data
4001-4005 monster data
5000-6030 POKE machine code/ machine code data

For the first five there are only three monsters patrolling the girders. The action then goes back to screen one and three extra monsters are added to make things worse

Variables

l lives
s score
h high score
mn number of monsters
mm monster movement
x,y co-ordinates of man
at attributes
as character at position of man
le level
bb bonus
fl number of collected flags



No extra monsters are added past 12, but the monsters then begin to move as fast as you — earlier you could out-run them

A short machine code routine is used to animate the monsters. Even with 12 of them the game is quite fast

Hints on conversion

The only complicated section is the machine code which moves the monsters. A routine needs to be written which can move up to 12 monsters. Checks need to be made so that monsters don't walk through girders or off the edge of them. In my version monsters only move back and forth and don't have the ability to move up or down. The Spectrum screen is 32 by 22. The data statements could be changed on different computers to fit more, or fewer girders or ladders on each screen

The climber scores 100 points for each flag he collects and wins the bonus on each screen he clears

He will die from

- a heavy fall
- when his bonus runs out
- if he comes into contact with a monster
- if he attempts to walk into anything red: girder, screen, perimeter

Your movement keys are:

a up
z down
CAPS/n jump left

n left
m right
CAPS/m jump right

The machine code is stored from line 3200. Adding to the BASIC program will probably over-write it and most likely cause the system to crash when the program is run.

```
[illegible]
```

```
[illegible]
```

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ER
POST OFFICE

Waiting for the Dragon

I wonder if any of your other readers have experienced the treatment I received from Dixon's mail order section.

Some days ago I contacted them regarding the supply of the Dragon 64 computer. They agreed to accept an advance order as they were expected in at any time.

A week later I phoned them and was told that my dragon 64 had been despatched the previous Monday in plenty of time for Christmas. I waited and sure enough, on December 21 a parcel arrived from Dixons.

On opening I found not the anticipated Dragon 64 but a Commodore 64!

The following morning I rang Dixons' mail order section and explained. A lady told me that they would let me have a return-paid label for the Commodore and on receipt of it they would despatch my Dragon!

Apparently this is normal policy when they make a mistake.

No, they were not prepared to make an exception in the circumstances and, no, the manager was not in. I did, however, get the number for the customer services section.

There I was dealt with by a very pleasant and helpful young man who seemed genuinely concerned that I was now left with incompatible software and hardware.

I suggested the use of Securicor or similar, as they have their own plane and can guarantee 48 hour delivery. This was ruled out as the mail order section could not deal with that. Similarly, Datapost went by the wayside. It seemed that the firm's red tape was keeping me from my awaited — and paid for — Dragon 64.

I cancelled my order and insisted that the credit card firm be informed that the transaction was cancelled and to act accordingly.

Some time later the man phoned me back to say that there was a Dragon 64 at the depot and it could be held for me until they received the Commodore! This would entail waiting — at least a week for the label then an estimated 10 days for the Commodore to reach Dixons, then probably a day or two for the Dragon to be despatched followed by another 10 days in the post.

Perhaps this will serve as a warning to others that a mistake by Dixons will result in the customer having a very long wait while they sort it out.

On the plus side, I will admit that the customer services section are very patient and helpful, but are obviously up against brick walls unknown to me.

Needless to say, I cannot recommend the firm and I consider they should rethink their policy towards their mistakes.

Peter Leach, Antrim, Northern Ireland

Ian Cattermole, Dixons' assistant company secretary, said: "We do not wish to make any comment, but we would like to thank Home Computing Weekly for giving us the opportunity."

Spectrum blues

Regular readers will no doubt be interested to hear of my "series of disasters" to add to those of Dorene Cox with her Issue 3 Spectrum. Mine concern the much-publicised Interface 2.

Firstly, delivery took ages! (But notice that Sinclair don't actually promise to deliver at all these days.)

Secondly, my credit card account was debited 28 days before the interface was despatched — a breach of the mail order retailers' code of practice.

Thirdly, the interface arrived without the ROM cartridge ordered at the same time, and with no reference to it.

Fourthly, it doesn't work! One of three things happen when it's connected to my Spectrum.

Either the printer prints beautiful, expensive, black ribbons and the Spectrum never reaches command mode, blank paper is spooled out by the printer, or everything seems OK until I run a program that calls for printout. Instead of clear type, garbage issues forth.

So I have four questions for Clive Sinclair:

1 Does interface 2 really work?
2 Is it compatible with Issue 2 Spectrums?
3 Is Sinclair so short of cash that it needs mine a month in advance?
4 Is the long-suffering mail order customer being used to field-test yet another unreliable product?

David Martin, Ravenshead, Nottingham

Bill Nichols, for Sinclair Research, said: "Mr Wrightman's problems are very regrettable and we would apologise for the difficulties he encountered. They have not been shared by the overwhelming majority of the nearly 650 000 UK Spectrum owners.

"Mr Martin raises two issues. As for Interface 2, we can assure him and all your readers that it is compatible with all Spectrums. His regrettable problem with the ZX Printer/Interface 2 operating together results simply from a dirty edge connector.

"As for the delay in despatching his Interface 2, this must have resulted from an administrative error. The product is not in short supply. It is in fact already available through some retailers."

Glory seekers

I agree wholeheartedly with the comments made by J. Harris (HCW 43). If people don't like programs or manage to score more than I do, I for one certainly don't care. These letters only spoil what is otherwise a great magazine for people like me who want information, program reviews and listings — not conceited, egotistical glory seekers or self-acclaimed critics.

M. A. Tomle, Colchester, Essex

Protecting Bomber

In issue 47 of your magazine, Ian Goldsack's Bomber game for the VIC-20 carried a warning that "continuous depression of the space bar can lead to corruption of the graphics." The reason this happens is that though some RAM is protected for the graphics by lowering memory pointers, they have not been lowered enough. This may be remedied by changing line 590 to POKE 56,28: POKE 52,28

Brian Donnelly, Twinbrook, Belfast

Chequer-board fun as you complete the squares

Change all the squares to the same colour. The fewer the moves the better the play in Alec Wakely's game of skill and strategy

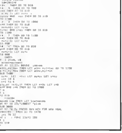
The game is called Reversal and you are given a randomly generated two colour grid of 16 squares. Some are in colour, others in the alternative colour. The object is to move from square to square. As you move the square that you land on changes colour — you can't move backwards, you can only move one square at a time and the object is to convert all squares to the same colour in as few moves as possible. You use the cursor control keys to move your marker and the square which you just left is marked with an X

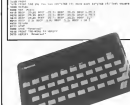
Variables

DIM a (4,4) colour values of each square
x y current position
ox oy previous square
nx ny new square
moves number of moves
on + tw values of both colours in play
col used to pick all three colours, finally for BORDER + PAPER
ks hold INKEY$ value
i, n, j, m FOR NEXT loops

How it works

210-320 initialise program
390-550 select colours
690 random starting position (x,y)
695 print instructions
700 print squares
800-1150 check if cursor keys pressed and if legal
1205 BEEP on move
1210 keep score
1230-1250 change new square colour and print
1260 update position
1270-1350 check if all the squares are the same colour
1410-1590 play music, scroll away and GOTO new game
Subroutines
3000-3070 choose colours
3100-3290 print starting squares
3420-3550 change colour of new square and flashing centre, print inverse X in last square and blank out previous X
3610-3800 print instructions
4000-4050 music





Now... the computers that listen to the radio

I'm not sure if this device, or one like it, will make it to your fair shores soon, but it sure seems like a novel technological application to me. Thanks to a well known communications company called Electra, owners of personal computers will be able to expand the communications capability of their device in a unique fashion.

Electra is very well known over here for its line of personal scanner radios. In case you may be unfamiliar with the term, a scanner radio is one capable of receiving many channels (usually tuned to public service communications radio frequencies such as police, fire departments, ambulance services, weather radio and so on) and automatically selecting and locking onto whichever one comes alive, until the user wants to hear something else. In the absence of any signal on any channel, the receiver scans all the available channels sequentially until an active signal causes it to lock on.

Anyway, what Electra has done is to design the new Bearcat CompuScan 2100 which combines computer and scanner technology. It is able to monitor live police, fire and other emergency bands, amateur radio and Coast Guard transmissions, and even aircraft communications frequencies, and turn your home computer into a real time news terminal.

The device features a video display unit which shows the user detailed information about the service being monitored. Each channel (up to 200 can be monitored) can be programmed to display the source and location of the transmission, 10-codes (as in 10-4 good buddy), phone numbers and lots more. Because there are so many possible frequencies to listen to, the scanner can be programmed to prioritise up to three levels so the more important calls can be heard first. If the user is listening to one channel when a priority call comes in, the screen flashes appropriately. I really don't have enough space in this column to devote to all the features of this device.

It is reported to be compatible with most of the major home computers currently available. In addition to the unit itself, the price includes a mains adapter, an antenna and 20 foot cord, all connectors, interface cable and software (disc or cassette). The software and interface cables will be packaged seperately for maximum versatility. The software will be user modifiable to suit individual needs. The unit is expected to cost about $500.

* * *

This year's craze apparently is going to be "integrated" software, whatever that may mean. At present, there is absolutely no definition of the term. With certain software packages, what is meant by integration by the makers does not often seem to integrated by disappointed users who purchased the package based on some ignorant salesperson's recommendation.

The idea of integrated software is great. Wouldn't it be nice if we could all buy one package that would let us, for example, create a spreadsheet, put the data from it in tabular form, use it as part of a report generated on the package's word processor, and be able to recalculate the data without having to dump the word processor and reload the spreadsheet portion of the package? I am certain you can think of other integrated tasks for which you would love to use your computer. The only problem is that such packages are less than likely to be created in a month or two by a 15-year-old whiz kid working at night in the family garage.

Although the packages are unavailable for most "home" computers, the examples are relevant. Let's take a look at three revolutionary software designs: the 1-2-3 package by Lotus, Apple's Lisa, and VisiCorp's VisiOn operating system.

At the time Lotus introduced its package, it did something that at the time was unique to the industry — it spent more than $1m on advertising and promotion. By doing so, it immediately established a market requirement. It is fairly common knowledge now that any software company that expects a decent market share from its new product had better be willing to spend at least $3 million on it! Even then, there is no guarentee that it will be accepted or even that it will be very good. Look at Lisa. According to statistics released by Apple itself, the Lisa project consumed over 200 man-years to bring to fruition, yet it is still far from perfect.

Finally, there is VisiOn. VisiCorp spent two years on its development before announcing the product, and then did not bring it out for another year after that! Imagine the time and expense that went into these packages, and all with no guarantee of success.

Think about what this may mean to the average consumer of such packages. The old phrase, let the buyer beware, takes on a new meaning in the software industry. When you go to buy an integrated software package, be careful. I mean be very careful. If the maker has not come up with an extremely well thought-out and well-designed product, if the maker does not have several million dollars in the bank for promotion and support, and if it is not able to keep several very talented programmers in-house for product improvement and quality control, the buyers of that product will ultimately (or in some cases very shortly) own a very expensive software paperweight.

I mention this now because the time will not be very far off until someone tries producing low-cost "integrated" software packages for the home computer market. I have gone through four word processors and three spreadsheet programs from six different companies, and feel I have yet to find the ultimate in either category. Each product I have tried has been well supported, and very well known.

Sceptic that I am, I feel very wary that some manufacturer will be able to come up with a package that will not only meet my individual requirements for each individual application but will also allow the data and all other functions to interact on any kind of integrated basis. An even if someone did, it would be difficult for me to shell out hundreds of dollars in the hope that when or if (most likely when) I needed support that the firm would still be in business and be able to handle my problems. It takes a lot of time, talent, and money to produce a package that will smoothly handle four or more tasks, let alone be able to stay around long enough to have the product succeed in the marketplace. And the marketplace is exactly where this issue will be decided.

We journalists can only warn about the pitfalls, and explain the potential benefits. It is up to you, the consumers, to force responsibility and professionalism on the marketplace. How you spend your money, and what you spend it on, will in the last analysis decide what gets developed. Spend wisely.

* * *

A new expansion interface board has just been announced for the Commodore 64. The Micro-X64 provides a total of three expansion slots. Two of these are positioned vertically and are supposed to be used in conjunction with programs on cartridges. The third slot is horizontally positioned and allows larger or more bulky cards such as 80-column cards to be plugged in and used with compatible software.

The unit will also support the various Z-80, CP/M, and other utility plug-in devices. One useful feature the board offers is a pause switch. By pressing this push button you can bring a program, game, or other machine function to a halt. Pushing it again gets the machine going from the point it was stopped with no drawbacks.

Another feature is the presence of what the vendor calls a "non-destructive" reset switch. When this button is pressed, the machine will reset but will not lose any machine-language program that had previously been loaded into memory. The unit has gold connectors at critical points and high quality circuit components. Included is a fully comprehensive manual with full documentation. It is immediately available and costs all of $49.95. Contact Compuscope, Tillamook, Oregon.

Alas, I am out of space again. See you next week.

Bud Izen
Fairfield, California

BEST SELLERS

Top Ten programs for the Commodore 64

1	Revenge of Mutant Camels	Llamasoft (—)
2	Mr Wimpey	Ocean (—)
3	Crazy Kong	Interceptor (3)
4	Manic Miner	Software Projects (—)
5	Hunchback	Ocean (—)
6	Space Shuttle	Microdeal (1)
7	Falcon Patrol	Virgin (2)
8	Grand Master	Audiogenic (—)
9	Motor Mania	Audiogenic (7)
10	Ship of the Line	Richard Shepherd (9)

Top Ten programs for the Dragon 32

1	The King	Microdeal (1)
2	Eight Ball	Microdeal (2)
3	Skramble	Microdeal (3)
4	Leggit	Imagine (4)
5	Transylvanian Tower	Richard Shepherd (8)
6	Dragonchess	Oasis (7)
7	Grand Prix	Salamander (5)
8	Cuthbert in the Jungle	Microdeal (—)
9	Devil of Thought	Microdeal (—)
10	Ring of Darkness	Wintersoft (—)

Compiled by Websters. Figures in brackets are last week's positions

Top Ten programs for the Spectrum

1	Atic Atac	Ultimate (1)
2	Chequered Flag	Psion (6)
3	Manic Miner	Bug Byte (4)
4	Lunar Jetman	Ultimate (2)
5	Flight Simulation	Psion (10)
6	Ant Attack	Quicksilva (9)
7	Stonkers	Imagine (3)
8	Kong	Ocean (—)
9	Jetpac	Ultimate (—)
10	Alchemist	Imagine (—)

Compiled by W H Smith. Figures in brackets are last week's positions

Top Ten programs for the ZX81

1	Football Manager	Addictive (1)
2	Flight Simulation	Sinclair (3)
3	Asteroids	Quicksilva (2)
4	Crazy Kong	PSS (9)
5	Invaders	Quicksilva (7)
6	Space Raiders	Sinclair (4)
7	Mother Ship	Sinclair (4)
8	Defenders	Quicksilva (8)
9	Hopper	PSS (—)
10	Espionage Island	Sinclair (—)

Compiled by Websters. Figures in brackets are last week's positions

Top 30

1	Manic Miner	Software Projects	Spectrum (2)
2	Hunchback	Ocean	Spectrum (1)
3	The Hobbit	M House	Spectrum (6)
4	Jetpac	Ultimate	Spectrum (5)
5	3D Ant Attack	Quicksilva	Spectrum (7)
6	Lunar Jetman	Ultimate	Spectrum (4)
7	Harrier Attack	Durrell	Spectrum (3)
8	Valhalla	Legend	Spectrum (14)
9	Atic Atac	Ultimate	Spectrum (13)
10	Hunchback	Ocean	CBM 64 (—)
11	Falcon Patrol	Virgin	CBM 64 (10)
12	Hobbit	M House	CBM 64 (12)
13	Chuckie Egg	A & F	Spectrum (20)
14	Kong	Ocean	Spectrum (8)
15	Penetrator	M House	Spectrum (11)
16	Frogger	Microdeal	Dragon (—)
17	The King	Microdeal	Dragon (18)
18	Zzoom	Imagine	Spectrum (9)
19	Chequered Flag	Psion	Spectrum (17)
20	Cuthbert in the Jungle	Microdeal	Dragon (16)
21	Hunchback	Superior	BBC (23)
22	Arcadia	Imagine	VIC 20 (21)
23	Manic Miner	Software Projects	CBM 64 (—)
24	Skrambler	Solor	VIC-20 (26)
25	Mini Kong	Anirog	VIC-20 (22)
26	Hunchback	Ocean	Oric (—)
27	Crazy Kong	Interceptor	CBM 64 (28)
28	Jetpac	Ultimate	VIC 20 (25)
29	Bugaboo (The Flea)	Quicksilva	Spectrum (—)
30	The Hobbit	M House	Oric (—)

Compiled by PCS Distribution (0254 691211) and sanctioned by the Computer Trade Association. Chart is for retail sales in individual outlets in the UK and Northern Ireland for the fortnight ended March 3

Top Ten programs for the VIC-20

1	NLBATET	Llamasoft (—)
2	Wizard and Princess	Mel House (2)
3	Wacky Waiters	Imagine (1)
4	Grid Runner	Llamasoft (4)
5	Snooker	Visions (3)
6	Bewitched	Imagine (6)
7	Catcha Snatcha	Imagine (7)
8	Arcadia	Imagine (9)
9	Skyhawk	Quicksilva (—)
10	Abducter	Llamasoft (8)

Compiled by Websters. Figures in brackets are last week's positions

Games for fast fingers

A batch of arcade-style games are given the once-over by our review team

Chuckle Egg Dragon 32 £7.90

A&F, Canal Side Industrial Estate, Woodbine St East, Rochdale

The object of this arcade-type game is to collect the eggs before the hens catch you or you run out of time

At the start you can choose to see the instructions or reset the control keys There are set already at the four cursor keys and the space bar for jumping I was quite content with this arrangement, but it's nice to offered a choice

Once it starts you are on the first level You, as the farmer, have to collect 12 eggs dotted about on various levels You need to climb ladders and jump over gaps avoiding hens Once this is completed another more difficult level arrives On level three and above the farmer has to travel via a conveyor belt

Each level is progressively harder and the number of hens increase Points are gained for each egg collected and a bonus for each level completed There is a timer which allows a generous period for each screen At the start you have five lives and extras are awarded, though there is no information given on this There is a high score table and very good graphics

A thoroughly enjoyable game I will be playing many more times

J E M

instructions	70%
playability	90%
graphics	85%
value for money	85%

★ ★ ★ ★ ★

Jet Boot Jack 32K Atari £9.95

English Software, P O Box 43, Manchester M60 3AD

Want to enhance your music collection? Simple Put on a pair of jet boots, soar along to the local record pressing plant and catch all the spare notes hanging about What? Well that's what Jet Boot Jack does

With the aid of your joystick Jack will spurt through the plant machinery picking up notes as he goes Obstacles increase in number according to the level of difficulty They take the form of bug like creatures overhanging the route our Jack is to take Should Jack collide with one he loses a life The bugs contract and expand in a disquieting manner Collisions though, are obligatory for the orange pods scattered throughout, they refuel Jack's boots

Movement between floors is accomplished by an exasperating interlocking network of lifts and slides Points are for bugs destroyed (by jack bouncing on them), and notes collected Bonus points are available

This colourful game is of arcade standard Sound is used well and graphics noteworthy Jet Boot Jack should please most addicts Needs joystick

T A

instructions	65%
playability	80%
graphics	90%
value for money	95%

★ ★ ★ ★ ★

Kamakazi 32K Acorn Electron £7.90

A&F Unit 8, Canal Side Industrial Estate, Woodbine St, Rochdale, Lancs

Once in a while a game sweeps the market and has game addicts hooked Alas Kamakazi is not one of these In fact it is a poor example A word of advice — always try a game out in the shop before buying

Kamakazi is another version of galaxians space invaders You defend your base with the help of a laser cannon against the invading enemy There are no shields for protection so the only way to stay alive is by dodging the bombs

There are five waves of attacking squadrons The graphics are so poor that it is very difficult to identify them Somewhere in the cluster is the Mother Ship supplying new ships as soon as you destroy the old ones There is no pleasure even in being blown up by the falling bombs, because when one of the bombs hits the base there is no sound, just a few spots The only sound comes from the cannon fire but it is unbelievably crude

It fails to take advantage of the superior graphics and sound of the Electron The only good feature of this game is the choice of keys to suit right or left handed players With so many good games in this price range I see no future for Kamakazi

M.B.

instructions	60%
playability	60%
graphics	40%
value for money	40%

★ ★

Batty Builders Atari £9.95

English Software, P O Box 43, Manchester M60 3AD

Batty Builders is a one-player game with excellent graphics but very little else going for it

The object is to complete an unfinished wall out of patterned blocks falling from an overhead conveyor The squares have to be caught by a joystick-controlled brickie at the base and thrown up by him to, hopefully land on the desired section of wall If your brickie fumbles his catch or is hit by a falling block he loses one of his five lives If you run out of blocks the game ends

When the wall is complete your score is updated and you move to the next level (there are eight) Ensuring the finished wall has rows of blocks built in a uniform pattern brings bonus points Later screens have your brickie frenziedly dancing to catch blocks and avoid horizontally scrolling crates of TNT at the same time

Unfortunately the game soon becomes tedious, which is a pity as obviously a lot of effort and programming skill has been expended, although the basic idea surely wasn't worth it Batty Builders goes to show that technical expertise is no substitute for imagination

T A

instructions	60%
playability	40%
graphics	90%
value for money	50%

★ ★

Meter Mania VIC-20 £7.50

Abrasco, The Grange Barn, Pikes End, Eastcote, Middlesex HA5 2EX

My first reaction was "Not another P** M** clone" But after playing for a time I realised the game had much more The plot isn't completely novel You control Mr Trick who looks like a Japanese Mickey Mouse He has to collect coins, in a maze of streets, until he has enough for the parking meter At intervals meter maids appear (they look like martians) and scuttle about trying to catch him When all four maids have appeared you are given a short period to reach the meter and pay up In all not quite Pac Man and certainly a lot more difficult

Technically the game is excellent Cunning use of pseudo sprites give very slick and smooth movement The use of exclusive ORing of screen contents allows objects to pass behind others and it's all rather tasty In fact, I ve only seen these sorts of effects once before It's a pity other writers couldn't take as much effort The sound effects aren't marvellous but in 3 5K what more can you expect? You can choose background colours, useful if you use a black and white TV and you want to maximise clarity

A very good game which is only marred by price Knock a pound off and it would be just right In this time of a shrinking number of releases for the VIC, this stands out from the rest

A W

instructions	70%
playability	80%
graphics	95%
value for money	75%

★ ★ ★ ★

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Make your micro do some work

Our reviewers star-rate five new programs to make your computer more useful

Oric Calc 48K Oric £14.50

Tansoft, Units 1 & 2, Cambridge Techno Park, Newmarket Rd, Cambridge CB5 8PB

Designed for the small business user, this enables a spreadsheet to be built up and maintained in conjunction with a cassette recorder. Spreadsheet programs are currently fashionable for home micros and this version will presumably allow the Oric to penetrate the business sector.

A comprehensive booklet explains the operation and the numerous options available for moving the entries around. To those unfamiliar with a spreadsheet, the basic idea is to enter values and descriptive text on to a sheet divided up into columns and rows. Formulae can be entered into boxes on the sheet to enable entries to be totalled, averaged or have more complex operations performed. A worked example of an account sheet with VAT entries etc is provided.

Certain parts were a little slow, but in general I found the program worked well as long as you kept a clear head. Once you have decided the layout required, operating the system is quite straightforward.

Only a limited amount of protection against invalid entries is provided and I found I could get errors if very large numbers (above a million) were being handled.

P.S.W.

instructions	75%
ease of use	75%
display	70%
value for money	80%

★ ★ ★ ★

My Secret File CBM 64 £9.95

Mosaic, John Wiley & Sons, Baffins La, Chichester, Sussex

Packaging a program and book can enhance enjoyment and sales of both. Many book and magazine publishers are venturing into software, with or without the book/program link. In this case I fear the link duplicates rather than complements.

The idea, first published as a book in 1982, is one I'm a little uneasy about anyway. It was sold for a children to record their secret thoughts about, for example, mum, dad, brothers and sisters, friends and even themselves. There's the obvious height, weight, hair colour, eye colour, and so on. And it checks for silly answers. Then there's favourite TV programmes, pop records, idols etc, and most hated of same. But what about Mum as I see her, the boring nag count? There is also a section for diary dates, what I'd like for Christmas and so on. All good database stuff, and the secrecy of storage on tape, with password and security code, is far better than hiding the book. So who needs the book?

A warning — if the new Data Protection Bill becomes law you will have to register if you record data on anyone outside your immediate family!

B J

instructions	70%
ease of use	80%
display	80%
value for money	70%

★ ★ ★

Filmastr Dragon 32 £19.95

Microdeal, 41 Truro Rd, St Austell, Cornwall PL25 5JE

Having pretty well saturated the market for Dragon games, Microdeal is now extending its range of more serious programs with oddly named filing system.

Filmastr is available on cassette or disc. I tested the cassette version. It comes with an A4 loose-leaf file of instructions containing 16 pages, so there is plenty of space for the details of your files.

You can design your own screen "form" on which to enter data, with up to 20 data fields. This has to be saved on cassette then re-loaded before you can go on with the program, a procedure which caused me considerable problems. Then you can enter your records, 200-300 of them depending on size. The keyboard response during this stage seemed to be even slower than usual for the Dragon. You have to type very slowly to avoid letters being missed.

Records can be sorted and selected on any field or combination of fields, you can sum the contents of any numerical field, and the records can be printed out in any format.

Quite a powerful program for its price, despite being less easy to use than one might wish.

M N

instructions	75%
ease of use	50%
display	80%
value for money	80%

★ ★ ★ ★

Sort Animotor 32K BBC £6.50

OIC, 15 Burghead Cl, College Town, Camberley GU15 4XL

Perhaps the most mysterious and unexplained area of computing is the topic of sorting. Computer buffs will argue heatedly the relative merits of Shell-Metzner v exchange sort, while the rest look on rather bemused.

This is sad as selecting the correct sorting process can dramatically speed a program's performance. The problem remained, therefore, how to understand the working process of each sort without having to take a Ph D in computer science.

That was until OIC produced this package. Sort Animotor is really a combination of programs that provide a full graphics tutorial outlining the processes and differences in speed and usage of 1 bubble sort, 2 shell sort, 3 exchange sort, 4 shuttle sort and 5 quick sort. Further options are available for inserting the animation routines in your own sorting subroutines. It has been said that a picture paints a thousand words, well a graphical demonstration certainly beats a dozen books.

An absolute must for any seriously learning programmer. Well done, OIC.

P D

instructions	90%
ease of use	75%
display	95%
value for money	90%

★ ★ ★ ★ ★

Editext Dragon 32 £12.95

Nectarine, W Foulsham & Co, Yeovil Rd, Slough, Berks SL1 4JH

A cheap but useable word processor, which doesn't have all the facilities of much more expensive programs but is perfectly adequate if you just want to type an occasional letter. It is supplied in a video type box, with a comprehensive leaflet. The cassette also has a version which can be saved on disc.

The standard Dragon display of capitals and inverse capitals is used. This is legible enough, but means that what you see on the screen looks nothing like the printed version.

Written in BASIC, it could easily be modified — to change type face options to suit different printers, for instance. The original options are for the Epson FX80.

Entering text is straightforward, but editing less so. The main Edit function is similar to the Dragon's editor. There is also a line editor which enables you to insert, delete or move single lines or blocks of text.

Other facilities include automatic wordwrap, justified printing, find and replace words on phrases, and of course saving and loading text files on disc or cassette.

Overall, it's as good a program as you could expect for the price.

M.N.

instructions	75%
ease of use	50%
display	50%
value for money	85%

★ ★ ★

48K SPECTRUM OWNERS Read This From OCP

...LET'S GET DOWN TO BUSINESS...

★ ★ ★ FINANCE MANAGER ★ ★ ★

Voted "the best value financial program available" by SINCLAIR USER

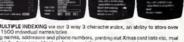
FINANCE MANAGER is a powerful, flexible and very fast MENU DRIVEN general purpose ledger package which includes both standing order and special forward planning features. The program will handle up to **255** separate accounts and 1800 transactions. The power of MACHINE CODE has enabled us to produce the very latest "on the page" presentation which lets you enter and edit data naturally, as if you were filling in a form.

These screens are just a sample to show the style of the program.

But that's not all, not by a long way. This program **automatically** raises a corresponding debit or credit for every entry, and will even open a new account if an entry features an unrecorded account name.
Information can be manipulated in various ways — you can call up your bank or credit card account, or analyse expenditure according to a variety of categories which you assign to the transactions. Instant Account balances can be listed at any time. A great time saving feature of this program is that account names and transaction descriptions need only be recorded **once**, as all the input fields will scroll existing files. There are many, many more features which make this the most powerful finance package around, we even include a test file for you to experiment with before getting started.

★ ★ ★ ADDRESS MANAGER ★ ★ ★

ADDRESS MANAGER utilises the same "on the page" presentation as FINANCE MANAGER and offers Spectrum owners a professional standard address filing, indexing and retrieval system. Below are examples of the screen presentations.



ADDRESS MANAGER has been carefully constructed to provide the user with a tool that is extremely friendly and easy to use, the speed and presentation of this program are second to none.
ADDRESS MANAGER features **MULTIPLE INDEXING** via our 3 way 3 character index, an ability to store over 400 full names and addresses or 1500 individual names/titles.
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Step forward, Sord users

I find HCW very enjoyable to read, but I do get a little despondent that, like other magazines, you highlight the more popular computers, like Spectrum, Commodore, Texas and so on

I own a Sord M5 which I found to be a very good computer But, like a lot of other people who don't own a popular model, I feel a little bit left out

How about publishing a program or two for owners of other computers to copy and enjoy?

L. Topple, Havant, Hants

In general, Home Computing Weekly reflects the popularity of computers — the more there are of a particular model, the more it is featured After all, it's a commercial world for us, too And, even though the magazine has grown, we have to ensure that the editorial pages have the widest possible appeal

However, we do try to feature less popular computers and those which are growing in popularity

If you, our readers, have written program/s worthy of publication — for any home micro — send them in Make sure you enclose a cassette and all the documentation, using our program pages as a guide Articles are welcome as well And our fees are competitive

Our BASIC at speed

Thanks for the Extended BASIC program for the Commodore 64 — now I won't have to buy Simon's BASIC

The trouble is that it takes so long to read the data and, as it has to be loaded each time you want to use a program written with its commands, this can be somewhat annoying, to say the least

Inserting the following at the beginning speeds up the processor slightly by by-passing the keyboard scanning/screen display routines

Also, once the program has been found to be error-free (i e when the checksum equals what it's supposed to), a relatively large amount of time is saved by removing the checksum routine altogether

```
10 POKE 788,52 POKE
   792, 193 (disable R/S
   and RES)
20 POKE 56334, (PEEK
   56334) OR 1  POKE
   53265 (PEEK 53265)
   AND 239
30 REM TURN OFF
   KEYBOARD AND
   SCREEN
40 REM READ DATA ETC

50 POKE 788,49 POKE
   792,71 (enable R/S and
   Res)
60 POKE 1, (PEEK 1) AND
   251  POKE 53265,
   (PEEK 53265) OR 1
70 REM TURN SCREEN/
   KEYBOARD BACK
   ON
```

Paul Baylis, Durham

My Oric calendar

Way back in May 1983 I purchased an Oric-1 By September I was suffering from the following problems

Erratic saving and loading in slow mode
An impossibility to save or load in fast mode
Several keys sticking
Several keys ceasing to function
"Watery" colours fluctuating badly

Not to mention the bugs in the BASIC translator, causing many problems when writing programs, such as any number variables being printed in green and erratic tabulation method to mention but two

Because of these problems I took the computer back to the shop from where it was purchased only to find it had gone bankrupt So on September 20 I wrote to Oric

October 21 No reply, wrote again to Oric
November 14 No reply, wrote again to Oric
December 1 Guess what? No reply, wrote again to Oric
January 5 Telephoned Oric They suggested I return the computer to them
January 6 Sent off to Oric, together with a letter listing all the problems
January 20 Telephoned Oric They said it was about to be repaired
January 27 Oric returned Only the loading fault was repaired
January 28 Returned computer to Oric, together with letter suggesting they repair all the faults or refund my money
February 11 still waiting

I am disgusted by Oric's after-sales service I spent £180 on what has turned out to be a thoroughly useless artifact I am now £180 out of pocket I could have bought a Spectrum or some other machine But, from its specifications, I thought the Oric would be a good machine — and so it would if it was not for all the problems associated with it

Bill Bailey, Hatfield, Herts

An Oric spokesman said "We are most concerned to hear of this case and our customer service representatives will be contacting Mr Bailey straight away in order to resolve the situation

Will we speak BASIC?

After many thousands of years humans have reached a point at which large numbers of them can talk to each other

This has become so as the result of the reduction in the amount of "international" languages being accepted and taught as such

For all the arguments in favour of one language or another, it is clear that one only is highly desirable Nobody now suggests the creation of new ones, rather that those that exist be developed to accommodate each new requirement

Having seen, and still suffering from, the difficulties of this multiplicity, it seems that there are still many who cannot accept that one computer language — however more ill-constructed or hard to learn than this next one or that next one — must be a prime target if computing is not to become as uncommunicative and intolerant, one system with another, as the human race

Now is the time to name the one (why not vote on it?) to which all the world's talent and ingenuity can be applied

Who knows but that one such truly international language for computing might develop into a human language — or do I hear someone suggest English BASIC?

Geoff Mathews, Hanwell, London N7

★ *software winner*

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"Although one of many (books designed to fill in all the gaps in the manual) it also looks one of the best with extensive sections on the particularly difficult areas of graphics and especially sprites." Popular Computing Weekly

☐ £8.95 384 pages 13-152273 6 December 83

SPRITE GRAPHICS FOR THE COMMODORE 64
SALLY GREENWOOD LARSEN

Ideal for beginners with no previous computing experience, this book gives you the documentation lacking when you buy the Commodore 64 to allow you to make full use of the computer's dazzling graphics capabilities. Twenty five programs as well as a four page colour insert showing screen effects are included.

☐ *£15.35 244 pages 13-838136-4 January 84*

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Clear step-by-step instructions for making the best use of the old and new ROM versions of the ORIC—both the V1 0/ORIC 1 and V1 1/ORIC ATMOS —are given. No previous knowledge of computers is needed to understand the explanations of how to use the keyboard, handle words and numbers, display information on the screen, use sound and graphics features, use a cassette recorder to store programs, etc. Once you have mastered these topics, **Understanding ORIC** takes you on to machine code and assembly language, file handling and using the printer.

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By the authors of the highly successful **BASIC Programming on the BBC Microcomputer** this new title provides a complete introduction to the Electron and to programming in BASIC. While they use the same structure as in their previous book, the Cryers present many new features in **BASIC Programming on the Acorn Electron**: more than 120 screen displays, cartoons, flowcharts and diagrams illustrate the text, which is over 100 pages longer than the BBC micro book, greater emphasis is given to structured programming and good programming techniques. Information on graphics has been expanded to show how to get 64 colours on your 8 colour machine, create pie charts and draw in perspective, introductions to flowcharts and to database programs are included.

A cassette, which contains all the programs listed in the book that are over 5 lines long, is available for this title. It will save you time and avoids keying errors.

☐ *£7.95 Paperback 328 pages 13-066259 3 January 84*

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100 PROGRAMS FOR THE ACORN ELECTRON

John Gordon, author of **100 Programs for the BBC Microcomputer**, provides programs on a wide range of topics for the Electron in this book, which contains 14 new programs. Games, business, home applications, maths, printing on the screen, data handling, science and graphics routines are among the many subjects covered. The programs are also available on a cassette as an optional extra.

☐ *£7.95 Paperback 224 pages 13-634858-0 March 84*

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HCW 2

The king is in his castle — but will he last?

Feed the peasants and keep the kingdom happy in this new version for the Dragon 32 of an old favourite from Marc Cawthorne

You are the king with all the power. You must choose how many men to work in the fields, on the dyke and to protect your village. If you're not careful the dyke may flood, or bandits might come from the mountains and wipe you out. You might even be invaded by your neighbouring country.

On the other hand, get it right, and you will prosper with plenty of money in the bank. The game runs on the Dragon 32.

Variables

Y year
R population
F grain
PO dyke up-keep
PC number of farmers
PB number of guards
PA number of soldiers
OY,VI,VA check for invasion, etc

How it works

10-80 set variables
110-300 input data for jobs in fields, dyke and defence
390-1540 graphics and main game routine

```
E

10 CLS5:PRINT@224,"THE KINGDOM OF SHELLINGE       ":SCR
EEN 0,1:FORT=1TO1000:NEXTT
20 CLS
30 GOSUB1200
40 H=1274
50 R=1250*(RND(117)1):F=10:
60 Y=1134
70 DY=0:DB=0
71 DF=0
80 REM
90 Y=Y+1:IFY=1170 THEN1390
100 GOSUB350
110 FORT=1A1TO170:SOUNDT,1:NEXTT
120 CLS:PRINT@10,"       ":PRINT@10,"KINGDOM"
130 PRINT"YEAR IS ";Y:PRINT
140 PRINT"DEATHS FROM FAMINE ";DF
150 PRINT"DEATH FROM FLOOD    ";DY
160 PRINT"DEATH FROM BANDITS ";DB
170 PRINT"PRINT POPULATION      = ",R
180 PRINT"BAGS OF GRAIN   = ";F
190 PRINT"********************************"
200 PRINT"       DISTRIBUTION OF LABOUR"
210 PRINT"( YOU MUST USE AT LEAST ONE :PRINT"PERSON FOR
 EACH JOB)."
220 PRINT" POPULATION= ";R
230 INPUT"DYKE UPKEEP";PO:SOUND2,1
240 INPUT"FARMERS";PC:SOUND25,1
250 INPUT"GUARDS";PB:SOUND50,3
260 IF PO =0 ORPC=0 OR PB=0 THEN CLS:PRINT@74,"YOU MADE
 A MISTAKE.": PRINT"(YOU MUST USE AT LEAST ONE":PRINT"P
ERSON FOR EACH JOB).  :GOTO190
270 PA=R-(PO+PB+PC)
280 IF PA<0 THEN PO=0 ANDPC=0 ANDPB=0:CLS:PRINT:PRINT"
YOU MADE A MISTAKE":PRINT:GOTO190
290 PRINT"SOLDIERS= ";PA
300 FORA=1TO1200:NEXTA:CLS
310 GOSUB400
320 GOSUB970
330 GOTO80
340 OY=(DY/100)*R
350 VI=(R/F)*100:IFPA=0 THENPA=1
360 VA=(PA/R)*100
370 IFVI>12 ANDVI<15THEN 390
380 RETURN
390 PRINT@170,"            ":PRINT@170,"INVASION",:FORT=1T
O100 STEP25:SOUNDT,4:NEXTT:FORA1=1TO1500:NEXTA1
400 CLS5:POKE1226,120:POKE1357,120:POKE1290,120:POKE135
0,120:FORP=1025 TO(1567-31)STEP32:POKEP,175:NEXTP:FORP=
1026TO(1567-30)STEP32:POKEP,175:NEXTP
410 FORP=1025 TO1536 STEP32:POKEP,171:POKEP,175:POKEP+3
2,171:POKEP+32,175:NEXTP
420 FORP=(1024+25)TO(1535-7)STEP64:POKEP,111:NEXTP:FORP
=(1024+26)TO(1535-6)STEP64:POKEP,92:NEXTP:FORP=(1024+28
)TO(1535-4)STEP64:POKEP,111:NEXTP:FORP=(1024+29)TO(1535
-3):STEP64:POKEP,92:NEXTP
430 FORP= 1034 TO 1357 STEP 32
431 POKEP-1,249:POKEP,249:POKEP+1,249:POKEP+32,249:POKE
P+31,249:POKEP+33,249
432 POKEP-1,207:POKEP,207:POKEP+1,207:POKEP+32,207:POKE
P+31,207:POKEP+33,207
433 NEXTP
434 POKEP-1,249:POKEP,249:POKEP+1,249:POKEP+31,249:POKE
P+32,249:POKEP+33,249
```

```
440 IA1 =RND(4)
460 PA1=RND(4)
470 IF PA1>=IA1 THEN550
480 FORP=(1024+10)TO(1267)STEP32:POKEP,255:POKEP,207:NE
XTP:POKEP,255
490 P=1322:POKEP,255:POKEP-32,255:POKEP+32,255:POKEP-1,
255:POKEP+1,255
500 FORT=100TO200STEP25:SOUNDT,2:NEXTT
510 PRINT@120," YOU WERE DEFEATED "
530 PLAY"CDEFG"
540 FORA1=1TO1000:NEXTA1:CLS:GOTO1331
550 PRINT@138," YOUR ARMY WON"
555 O=INT(PA)+RND(75)
560 PRINT@170," SOLDIERS LOST= ";O
570 PLAY"O4CDEFG"
580 R=R-O:PA=0
585 IF R<0 THEN R=0
590 FOR A1=1TO2000:NEXTA1:RETURN
600 REM
610 CLS5
620 POKE1226,120
630 POKE1357,120:POKE1290,120:POKE1350,120
640 FORP=1025 TO(1567-31) STEP32:POKEP,175:NEXTP:FORP=1
026TO(1567-30) STEP32:POKEP,175:NEXTP
650 FORP=1025TO1536STEP32 :POKEP,171:POKEP,175:POKEP+32
,171:POKEP+32,175
660 NEXTP
670 FORP=(1024+25)TO(1535-7)STEP64:POKEP,111:NEXTP
680 FORP=(1024+26)TO(1535-6)STEP64:POKEP,92:NEXTP:FORP=
(1024+28)TO(1535-4)STEP64:POKEP,111:NEXTP:FORP=(1024+29
) TO(1535-3)STEP64:POKEP,92:NEXTP
690 PRINT@10,"         ",:PRINT@10,"*KINGDOM*";
700 FORT=150TO250STEP25:SOUNDT,3:NEXTT
710 REM
720 OA=(0+RND(2))-1
730 OB=(0+RND(2))-1
740 IF OA=1 THENPRINT@74,"          ",: PRINT@74,"BANDITS
 ";
750 IFOA=0ANDOB=0 THEN GOTO 1520
760 IFOA=0 ANDOB=1 THEN GOTO1420
770  IFOA=1 AND OB=1 THEN 780
780 FORH=1274 TO(1253+RND(11))STEP-1
790 POKE H,191:POKE H,207:POKE H-1,191:POKEH-1,207:POKE
H-2,191:POKEH-2,207
800 NEXTH
810 POKEH,191
820 SOUND30,1
830 FORH=1341TO(1317+RND(11))STEP-1
840 POKEH,191:POKEH,207:POKEH-1,191:POKEH-1,207:POKEH-2
,191:POKEH-2,207:NEXTH:POKEH,191
850 SOUND35,1
860 FORH=1404TO(1383+RND(9))STEP-1:POKEH,191:POKEH,207:
POKEH-1,191:POKEH-1,207:POKEH-2,191:POKEH-2,207:NEXTH:P
OKEH,191
870 SOUND40,1
880 DC=(0+RND(3)-1)
890 IFDC=0 THEN 950
900 FORN=1217 TO(1215+RND(11)) STEP1
910 POKEN,175:NEXTN
920 FORT=1313 TO(1310+RND(9)) STEP1:POKET,175:NEXTT
930 FORT=1281TO(1282+RND(8)):POKET,175:NEXTT
940 FORT=1345 TO(1355+RND(7)):POKET,175:NEXTT
950 FORT=1TO2500:NEXTT
```

DRAGON 32 PROGRAM

```
940 RETURN
970 WF=RND(1)*3
980 EA=RND(1)*4+5
990 U=EA*PC*WF
1000 AS=((R*21)/P3 2)*(RND(1)*80)
1010 IFF<0 THEN 1300
1020 F=U-(AS*U)/100
1030 DF=(((R*3 142*2)/F)/100)*R
1040 IFDF<0 THEN DF=0
1050 IFDC=0 THEN DY=0
1060 IFDC=0 THEN 1090
1070 IFDB=1THEN1080
1080 DY=INT(2*RND(1121))
1090 BR=INT(RND(1)*10)+1
1100 IF DA>0THEN DB=0
1110 IFDA=0 THEN 1130
1120 DB=(BR/100)*R
1130 DF=INT(DF):DY=INT(DY):DB=INT(DB):F=INT(F)
1140 R=R-(DF+DB+DY)
1150 IFF 0 THEN 1300
1160 IFR<2 THEN 1300
1170 IFDY>0 THEN F=F*(RND(1.5))
1180 R=R+(INT(R/(RND(9))))
1190 RETURN
1200 IFD=0THEN 1220
1210 GOTO1200
1220 CLS
1230 PRINT"********************************"
1240 PRINT" THE KINGDOM OF DNELLINDE":PRINT"*********
*****************":PRINT:
1250 PRINT"YOU ARE THE RULER OF A SMALL   ":PRINT"KINGD
OM YOU CONTROL THE LOCAL ":PRINT WORKFORCE AND THE ARMY
":PRINT:PRINT"DISTRIBUTE THE POPULATION":PRINT BETWEEN
THE BYKE,FARMERS,GUARDS":PRINT" AND THE ARMY.":D=1
1260 PRINT"********************************"
1270 FORT=1TO200 STEP20:SOUNDT,3:NEXTT
1280 FORA=1TO3000:NEXTA
1290 RETURN
1300 CLS:PRINT@74,"YOUR PEOPLE HAVE "
1310 PRINT@106,"BEEN WIPED OUT."
1320 FORT=1TO250STEP25:SOUNDT,3:NEXTT
1330 FORA=1TO1500:NEXTA:CLS
1331 W=Y
1332 PRINT:PRINT" YOU REIGNED FROM":PRINT        1134 UN
TIL ;W
1340 PRINT:PRINT:PRINT"ANOTHER GO?(Y/N)"
1350 A$=INKEY$:IF A$=""THEN 1350:IFA$="N"THEN END
1360 IF A$="Y" THEN 40
1370 IF A$<>"Y" AND A$<>"N" THEN1350
1380 END
1390 CLS:PRINT@74,"YOU DIED OF OLD AGE"
1400 FORT=1TO250STEP25:SOUNDT,4:NEXTT
1410 GOTO1340
1420 CLS5:POKE1226,128:POKE1357,128:POKE1290,128:POKE13
50,128:FORP=1025 TO1536 STEP32:POKEP,175:NEXTP:FORP=102
6TO1527 STEP32:POKEP,175:NEXTP
1430 FORP=1025 TO1536 STEP32:POKEP,171:POKEP,175:POKEP+
32,171:POKEP+32,175:NEXTP
1440 FORP=1049TO1520STEP64:POKEP,111:NEXTP:FORP=1050 TO
1529STEP64:POKEP,92:NEXTP:FORP=1032TO1531 STEP64:POKEP,
111:NEXTP:FORP 1053TO1532STEP64:POKEP,92:NEXTP
1450 FORN=1217TO(1219+RND(11))STEP1:POKEN,175:NEXTN:FOR
T=1313TO(1310+RND(9)) STEP1:POKET,175:FORT=1201TO(1202+
RND(8)):POKET,175:NEXTT:FORT=1345TO(1348+RND(8)):POKET,
175:NEXTT
1460 DY=(5+RND(89))
1470 DB=0
1480 F=F*(RND(3))
1490 R=R-(DF+DY+DB)
1500 IFR<2 THEN 1300
1510 GOTO80
1520 F=F*(RND(5))
1530 R=R+(INT(R/(RND(4))))
1540 GOTO70
```

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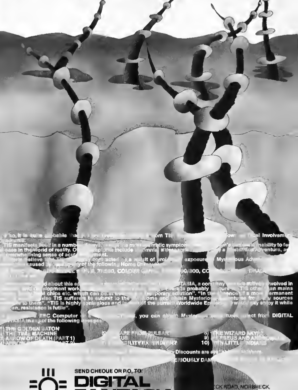

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Bombs away! It's the only way to save yourself

There's a few extra features in Blitz, Joel Goodwin's version of the arcade classic, written for any Atari. Type it in and you'll see

Blitz speaks for itself — you must bomb the city flat to land safely.

You have an unlimited supply of bombs and can choose their destructive level. The speed of the plane and the height of the buildings can also be selected.

Full instructions are included in the program. When typing it in, pay particular attention to the REMs.

Good luck!

● The idea for my game came from Shungo Sugiura's Bomber for the Oric in HCW 9

Variables

PL$ plane
BB$ scrolling title
DL display list pointer
PX,PY plane positions
SCRN holds ASCII character that has been located
WAIT delay loop
W number of time bomb hits a building block
SP speed
F flag if bomb is on screen
ST joystick button
BX BY position of bomb
DI height of buildings
DE destructive level
BA scroll

How it works

16-40 DIMension strings and set up screen for title and set colours for main game
60-165 main routine
170-190 win routine and automatic level increase
200-430 game instruction and joystick commands to alter level
460-600 set up plane and buildings
620-630 initialise bombing
650-690 crash routine and option to replay
700-710 title scroll routine
5000-5060 redefine characters

Hints on conversion

STICK(0) reads joystick port specified
STRIG(0) reads joystick button
GRAPHICS 0 sets screen format to 40 × 24
LOCATE positions cursor and readers contents under it
POSITION puts cursor at specified point on screen
SETCOLOR 1,0,0 sets character colour to black
SETCOLOR 2,3,8 sets background to pink
SETCOLOR 0,1,10 sets scrolling characters to yellow
SETCOLOR 4,3,0 sets border to dark red
Line 651 flashes screen and characters. The scroll routine in lines 700-710 can be left out.

```
0 GRAPHICS 17:POKE 708,70:POKE 712,49:POSITION 4,10:? #
6;"PLEASE WAIT":GOSUB 5000
1 REM "ANY TEXT IN ITALICS SHOULD BE ENTERED AS REVERSE
 FIELD"
2 REM ****************************
3 REM * CONVERTED FROM A PROGRAM *
4 REM *     BY SHINGO SUGIURA    *
5 REM ****************************
6 REM *   17 SPACES BEFORE AND   *
7 REM * AFTER TITLE IN NEXT LINE *
8 REM ****************************
16 DIM PL$(10),BB$(60):BB$="                  BLITZ BY
 JOEL GOODWIN
17 ? CHR$(125):SETCOLOR 4,3,0:SETCOLOR 2,3,8:SETCOLOR 1
,0,0:SETCOLOR 0,1,10:POKE 752,1:POKE 756,224
18 REM * MODIFY DISPLAY LIST FOR TITLE *
19 DL=PEEK(560)+PEEK(561)*256:POKE DL+3,70:POKE DL+6,6
20 GOSUB 210
29 GRAPHICS 0
30 ? CHR$(125):SETCOLOR 4,3,0:SETCOLOR 2,3,8:SETCOLOR 1
,0,0:POKE 756,PEEK(1536)
40 POKE 752,1:GOSUB 460
60 POSITION PX-1,PY:? PL$:PX=PX+1:SOUND 0,200,12,2:IF C
L=1 THEN CL=0:SOUND 1,0,0,0
70 LOCATE PX+1,PY,SCRN:IF SCRN<>32 THEN 650
80 IF PX>=35 THEN POSITION PX-1,PY:? "  ":PX=1:PY=PY+1
90 FOR WAIT=1 TO SP:NEXT WAIT
100 ST=STRIG(0):IF ST=0 AND F=0 AND PY<>21 THEN GOSUB 6
20
110 IF F=0 THEN SOUND 1,0,0,0:GOTO 160
120 POSITION BX,BY:? " ":BY=BY+1
130 IF W=DE OR BY=22 THEN W=0:F=0:CL=1:SOUND 1,0,8,4:GO
TO 150
140 LOCATE BX,BY,SCRN:IF SCRN<>32 THEN W=W+1:SOUND 1,10
0,8,4
150 POSITION BX,BY:? "-"
160 IF PY=21 AND PX=25 THEN 170
165 GOTO 60
170 POSITION PX-1,PY:? PL$
180 ? :? "WELL DONE  YOU'VE LANDED SAFELY.";:POKE 77,0
185 POKE 752,1:IF SP>1 THEN SP=SP-1
187 IF DI>1 THEN DI=DI-1
190 SOUND 0,0,0,0:FOR WAIT=0 TO 800:NEXT WAIT:GOTO 30
200 REM * INSTRUCTIONS *
210 ? :?
250 ? "USE THE TRIGGER TO DROP BOMBS ON ":? :? "THE CIT
Y SO YOU MAY LAND SAFELY":?
260 ? "THEN THE SPEED INCREASES":? :? "AND THE BUILDING
S GET HIGHER"
270 POSITION 2,12:? "ENTER PLANE SPEED BY PUSHING JOYST
ICK":? :? "UP OR DOWN THEN PRESS TRIGGER"
271 ? :? "SPEED 1 TO 9 (SLOW TO FAST)":SP=1
280 IF STRIG(0)=0 THEN SP=10-SP:GOTO 320
290 GOSUB 700
300 JS=STICK(0):IF JS=14 THEN SP=SP+1:IF SP>9 THEN SP=1
305 IF JS=13 THEN SP=SP-1:IF SP<1 THEN SP=9
310 POSITION 2,18:? "  ";SP:GOTO 280
320 ? CHR$(125):POSITION 2,4:? "ENTER CITY HEIGHT BY PU
SHING JOYSTICK":? :? "UP OR DOWN THEN PRESS TRIGGER":DI
=1
330 ? :? "1 TO 9 (LOW TO HIGH)"
345 FOR WAIT=0 TO 100:NEXT WAIT
350 IF STRIG(0)=0 THEN DI=10-DI:GOTO 380
360 JS=STICK(0):IF JS=14 THEN DI=DI+1:IF DI>9 THEN DI=1
365 IF JS=13 THEN DI=DI-1:IF DI<1 THEN DI=9
370 GOSUB 700:POSITION 2,10:? "? ";DI:GOTO 350
380 FOR WAIT=0 TO 100:NEXT WAIT
390 ? CHR$(125):POSITION 2,4:? "ENTER BOMB DESTRUCTIVE
LEVEL":? :? "BY PUSHING JOYSTICK UP OR DOWN"
395 ? :? "AND THEN PRESS TRIGGER":DE=1
397 ? :? "1 TO 7 (EASY TO HARD)"
399 FOR A=0 TO 100:NEXT A
400 IF STRIG(0)=0 THEN DE=DE+2:DE=12-DE:RETURN
410 POSITION 2,12:? "? ";DE:GOSUB 700
420 JS=STICK(0):IF JS=14 THEN DE=DE+1:IF DE>7 THEN DE=1
425 IF JS=13 THEN DE=DE-1:IF DE<1 THEN DE=7
430 GOTO 400
460 PX=2:PY=3:PL$=" <>":F=0
465 REM * BLITZ IN NEXT LINE INVERSE *
470 ? :? "  B L I T Z"
570 FOR BUX=5 TO 32
573 BUL=ASC("+"):TOP=0
575 IF RND(0)>0.5 THEN BUL=ASC("="):TOP=1
580 FOR H=22 TO INT(RND(1)*(14-DI)+DI+8) STEP -1
590 POSITION BUX,H:? CHR$(BUL):NEXT H:IF TOP=1 THEN POS
ITION BUX,H+1:? "*"
600 NEXT BUX:RETURN
610 REM * INITIALISE BOMBING *
620 BX=PX:BY=PY+1:F=1
630 RETURN
640 REM * CRASH INTO BUILDING *
650 SOUND 0,0,0,0:SOUND 1,0,0,0
651 FOR MM=0 TO 74:POKE 710,6:SETCOLOR 1,1,MM:POKE 710,
40:NEXT MM:POKE 77,0
670 POSITION 1,5:? "PRESS TRIGGER TO REPLAY BLITZ"
680 IF STRIG(0)<>0 THEN 680
690 FOR WAIT=0 TO 100:NEXT WAIT:CLR :GOTO 16
699 REM * SCROLLING TITLE *
700 FOR WAIT=0 TO 25:NEXT WAIT
705 BA=BA+1:IF BA=40 THEN BA=1
710 POSITION 0,0:? #6;BB$(BA,BA+19):RETURN
4999 REM * REDEFINE CHARACTERS *
5000 SET=(PEEK(106)-8)*256:RESTORE 5010:POKE 106,SET/25
6
5010 DATA 224,192,224,243,255,255,63,0,0,240,0,1,249,25
5,255,249,65,0
5020 DATA 232,255,153,153,255,255,153,153,255,88,255,12
9,129,255,255,129,129,255
5030 DATA 80,24,24,24,56,126,153,153,255,104,28,8,28,62
,28,28,28,8
5040 FOR I=0 TO 1023:POKE SET+I,PEEK(57344+I):NEXT I
5050 FOR CHAR=1 TO 6:READ CH:FOR J=0 TO 7:READ DT:POKE
SET+CH+J,DT:NEXT J:NEXT CHAR
5060 POKE 1536,SET/256:RETURN
```

Avoid the rhinos... shrink your programs

A fun game and a useful utility for the unexpanded VIC-20, by Ian Creasey. Both are from his book, VIC-20 Mindstretchers, just out from Sigma Technical Press

Rhino

You have to get through a jungle to get home — without being eaten by the rhinos.

Every time you manage this another rhino is added to the herd. The rhinos are hidden and only appear when they can see you.

When they do appear they pursue you with unerring accuracy.

The only advantage you have is that you can go through diagonal gaps in the trees while they can't.

To move with the potentiometer joystick, point the stick in the appropriate direction and press the fire button.

To move with the keyboard, use the function keys as follows:

F8	F2	F2
F7		F3
F8	F5	F4

Remember that you can save time and memory by using abbreviated keywords, ? for PRINT, for example. A full list is in appendix D of the manual. REMs should be omitted.

Note: In line 7030 there are nine spaces and nine cursor lefts.

How it works

10-30	initialise program
1000-1030	choose joystick or keyboard
2000-2110	initialise game
3000-3090	move you
4000-4060	check whether new rhino should appear
5000-5130	move rhinos
6000-6030	crushed!
7000-7010	safe at home!
7020-7070	another game?
8000-8050	put new rhino on screen
5000-9010	make beep

Variables

NR	number of rhinos
T	top-left corner of screen — 7680 or 4096
SR	screen and border colour register — 36879
OF	different between colour screen and character screen — 30720 or 33792
JK$	joystick/keyboard — "J" or "K"
NA	number of rhinos that have appeared
XX,YY	your co-ordinates
MS	your move
RA	rhino appeared just now?
RP	rhino's position
RX,RY	rhino's co-ordinates
AG$	another game — "Y" or "N"
RX%(),RY%()	rhino's co-ordinates array
V%()	has rhino appeared? array
FNX(A),FNY(A)	functions to calculate your movement on the screen
FNP(T)	function to calculate your position on the screen from co-ordinates

Shrink

This program will shrink your BASIC program by removing all spaces and all REM statements. It takes up 256 bytes at the top of memory. To destroy the progam and reclaim the 256 bytes, type SYS7424. Shrink will work on an unexpanded or a 3K expanded VIC.

Note: It is advisable to SAVE the program before RUNning it, as one error in the machine-code data will probably cause the VIC to crash.

- **VIC-20 Mindstretchers, £5.95. Sigma Techoical Press, 5 Alton Road, Wilmslow, Cheshire SK9 5DY**

```
3 REM
4 REM************
5 REM***RHINO***BY IAN CREASEY***,
6 REM***********
7 REM
9 REM*FUNCTION KEYS OR 'STACK' JOYSTICK
10 NR=3 DIMRX%(20),RY%(20),V%(20) T=PEEK(64
   8)*256 S£=36879 OF=(37888+4*(PEEK(36866)
   AND128))-T
20 DEFFNX(A)=(A=7ORA=4ORA=8)-(A=5ORA=2ORA=6
   ) DEFFNY(A)=(A=8ORA=1ORA=5)-(A=6ORA=3ORA
   =7)
30 DEFFNP(T)=T+X+Y*22
1000 REM*GET JOYSTICK/KEYBOARD
1010 PRINT"J'STACK' █JOYSTICK OR   █KEYBOAR
   D?", POKE198,0 POKE204 0
1020 GETJK$ IFJK$<>"J"ANDJK$<>"K"THEN1020
1030 PRINTJK$
2000 REM*INITIALISE
2010 POKE204,1 POKES£,238 PRINT"██THERE ARE"
   NR"█ RHINOS" NA=0
2020 FORI=T+22TOT+505 IFRND(1)<.33THENPOKEI+O
   F,5 POKEI,88
2030 NEXT FORI=T+53TOT+141STEP22 FORJ=0TO4
2040 POKEI+J,32 POKE330+I+J,32 NEXTJ,I
2050 POKET+99,136 POKEOF+T+99,0
2060 FORI=1TONR V%(I)=0
```

```
2070 X=INT(22*RND(1)) Y=INT(11*RND(1)+1)
2080 IFPEEK(FNP(T))<>32THEN2070
2090 POKEFNP(T),96 RX%(I)=X RY%(I)=Y NEXT YX=
     11 YY=18
2100 FORI=TTOT+505 IFPEEK(1)=96THENPOKEI,32
2110 NEXT
3000 REM*YOUR MOVE
3010 PRINT"██YOUR MOVE.            " POKE198,0
3020 X=YX Y=YY POKEFNP(T),42 POKEFNP(T)+OF,2
3025 IFJK$='K"THEN3039
3029 IFPEEK(37137)=126THEN3029
3030 IFPEEK(37137)=118THEN3030
3031 IFPEEK(36872)=2ANDPEEK(36873)=2THENM$="
     █" GOTO3040
3032 IFPEEK(36872)=2ANDPEEK(36873)<255THENM$=
     "● GOTO3040
3033 IFPEEK(36872)=2THENM$="█ GOTO3040
3034 IFPEEK(36873)=2ANDPEEK(36872)<255THENM$=
     "█" GOTO3040
3035 IFPEEK(36873)=255ANDPEEK(36872)<255THEN
     M$="█" GOTO3040
3036 IFPEEK(36873)=2THENM$= █  GOTO3040
3037 IFPEEK(36873)<255ANDPEEK(36872)=255THEN
     M$='█' GOTO3040
3038 M$="█" GOTO3040
3039 GETM$ IFM$=""THEN3039
3040 A=ASC(M$) IFA<133ORA>140THEN3025
3050 A=A-132 X=FNX(A)+YX Y=FNY(A)+YY IFPEEK(
```

▶

```
     FNP(T))<>32ANDPEEK(FNP(T))<>136THEN3020
3060 IFX<0ORX>21THEN3030
3070 IFY<1ORY>22THEN3030
3080 SX=X X=YX YX=SX SY=Y Y=YY YY=SY POKEFNP(
     T),32
3090 GOSUB9010 X=YX Y=YY POKEFNP(T),42 POKEOF
     +FNP(T),2 IFFNP(T)=T+39THEN7010
4000 REM*CHECK- NEW RHINO APPEAR?
4010 PRINT"▮                    " RA=0
4020 FORI=1TONR X=RX%(I) Y=RY%(I) RP=FNP(T)
     IFV%(I)=1THEN4060
4030 LD=22*((Y>YY)-(YY>Y))+((X>YX)-(YX>X))
4040 RP=RP+LD IFPEEK(RP)=32THEN4040
4050 IFPEEK(RP)=42THENV%(I)=1 NA=NA+1 RA=1 G
     OSUB9010
4060 NEXT IFRA=1ORNA=0THEN3010
5000 REM*MOVE RHINO
5010 PRINT"▮RHINO MOVE." FORI=1TONR RX=RX%(I
     ) RY=RY%(I) RF=FNP(T) IFV%(I)=0THEN5130
5020 FORA=1TO8 X=RX+FNX(A) Y=RY+FNY(A) PA(A)
     =PEEK(FNP(T)) NEXT GOTO5050
5030 IFPA(C1)=88ANDPA(C2)=88THENPA(C3)=88
5040 RETURN
5050 C1=1 C2=2 C3=5 GOSUB 5030 C1=3 C3=6 GOS
     UB5030
5060 C2=4 C3=7 GOSUB5030 C1=1 C3=8 GOSUB5030
5070 BN=999 FORA=1TO8 IFPA(A)<>32ANDPA(A)<>4
     2THEN5100
5080 X=RX+FNX(A) Y=RY+FNY(A) N=ABS(YY-Y)+ABS(
     YX-X)
5090 IFN<BNTHENBN=N BM=A
5100 NEXT X=RX Y=RY POKE FNP(T),32 X=X+FNX(BM
     ) Y=Y+FNY(BM)
5110 POKEOF+FNP(T),6 POKEFNP(T),94 RX%(I)=X R
     Y%(I)=Y
5120 IFFNP(T)=T+YX+YY*22THENI=22
```

```
5130 NEXT IFI<22THEN3010
6000 REM*CRUSHED!
6010 RP=FNP(T) POKERP-1,26 POKERP,1 POKERP+1,
     16 I=1
6020 FORI=1TO49 FORJ=-1TO1 POKERP+J+OF,C-1 NE
     XTJ FORJ=1TO20 C=3-C NEXT NEXT
6030 PRINT"▮▮ C R U S H E D ! ! ▮" GOTO7020
7000 REM*SAFE!- ANOTHER GAME
7010 PRINT"▮▮ S A F E ! ! ▮" IFNR<20THENNR=NR
     +1
7020 FORI=0TO1999 NEXT
7030 PRINT"▮ANOTHER GO?          ▮▮▮▮▮▮▮▮▮▮", P
     OKE198,0 POKE204,0 IFJK$="K"THEN7040
7033 IFPEEK(37137)=126THEN7033
7035 IFPEEK(37137)=118THEN7035
7037 GOTO2010
7040 GETAG$ IFAG$="N"THENPOKE204,1 PRINT"▮" E
     ND
7050 IFAG$="Y"THEN2010
7060 IFAG$=""THEN7040
7070 POKE204,1 PRINT"▮PRESS 'Y' OR 'N'." FORI
     =0TO999 NEXT GOTO7030
8000 REM*FLASH NEW RHINO AND MAKE NOISE
8010 POKE36878,8 FORI=1TO3 FORJ=1TO5
8020 POKE36877,150 FORK=1TO20 NEXT POKE36877,
     0
8030 NEXTJ,I FORI=1TO5 POKEFNP(T)+OF,6 POKEFN
     P(T),222
8040 FORJ=0TO99 NEXT POKEFNP(T) 94 FORJ=0TO99
      NEXTJ,I
8050 POKEFNP(T)+OF,6 POKEFNP(T) 94 RETURN
9000 REM*BEEP
9010 POKE36878,8 POKE36976,150 FORI=1TO300 NE
     XT POKE36976,0 FETURN
```

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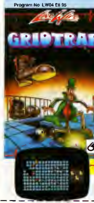

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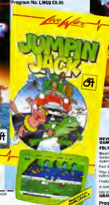

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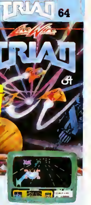

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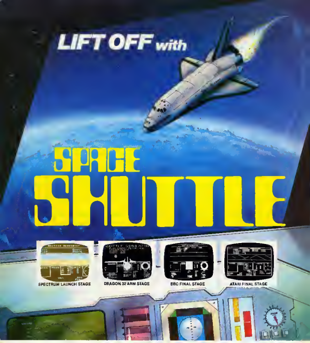
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